AMERICAN VETERINARY REVIEW,

MARCH, 1895.

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EDITORIALS.

TUBERCULOSIS SCARE.—This subject is more than ever occupying the attention of veterinarians, as well as it does that of those who by their occupation, their trade or their fancy, are interested as to what will become of all their cattle should the disease be found prevailing in their stocks.

Indeed, our agricultural papers are in their various issues repeatedly treating on the subject; veterinarians are making experiments and familiarizing themselves with the application of the tuberculin test; legislatures in the various States are passing or requested to enact laws relating to tuberculosis; applications for official veterinary appointments are pouring in before those who hold the power of appointment, and what not? It is the repetition of the excitement which prevailed when the stamping out of pleuro-pneumonia was inaugurated a few years ago.

In our issue this month, we publish a long article from the pen of that indefatigable student and observer, Professor Law, and we have no doubt it will, not only be read with pleasure and interest, but also will prove a subject of great value, presenting as it does, the personal views of one, who we have been accus-

tomed to consider as an authority in matters concerning sanitary veterinary medicine.

The article will no doubt create a sensation, especially in Massachusetts, where things do not seem to run very smoothly, if we are to believe the *comptes rendus* of some investigations which have been made in relation to the manner in which the process of tuberculin test has been carried out, the specific tagging of cattle has been done, etc. Our worthy friends of the Board of Cattle Commissioners must have had unpleasant tasks and disagreeable duties to perform, but after all it was for the good of all, and it does not belong to us to be too severe in our criticisms so long as we have no official authority to inform us, and we are obliged to depend on news and agricultural papers.

But leaving all that as it is, all this noise about tuberculosis, like all that which was made at the time of pleuro-pneumonia, must have a bad effect, not only at home, but abroad. In fact it has, and if we are to believe that the French Government has passed resolutions preventing the importation of American cattle on French soil, because of the prevalence of contagious diseases, is it not justifiable to think that this tuberculosis scare has something to do with it?

The pretended cause for the action of the French Government is simply ridiculous—for certainly we have no contagious diseases among our cattle of which French authorities can be afraid, and we have no doubt that our Chief of the Bureau of Animal Industry will at once take proper measures to show the error of closing French ports to American cattle.

Let us make less noise about the disease—let us work quietly. Do not allow us to boast too much of the beginning of one undertaking, which in the eyes of many cannot be certain of success, and in all probabilities we will be spared many annoyances and disappointments. Veterinarians have already been pretty roughly spoken of in relation to this noise; it would be better for them to be more careful, less hasty, and less positive of the results they have in view, no matter how powerful their convictions may be.

JOHN GAMGEE.—It is a sad duty for us to record the death of this great veterinarian. We knew him when we were a student, we renewed friendship in this country when he came to America some years ago. His work in behalf of veterinary medicine is known to many of us, the books which he has written, his journal, the *Edinburgh Veterinary Review*, his connection with veterinary education, all have made for him in the veterinary world, a place which he filled well. John Gamgee was born in 1831, so that he was in his 64th year at the time of his death. In the last years of his life he had given up veterinary science and had turned his attention to engineering.

ORIGINAL ARTICLES.

STATE SUPPRESSION OF TUBERCULOSIS UNWARRANTABLE IF NOT THOROUGH.

BY JAMES LAW, F.R.C.V.S., Ithaca, N. Y.

TUBERCULOSIS AND STATE MEDICINE.

In undertaking any systematic State sanitary work against tuberculosis the prime consideration must be that such work shall have a permanent value. Many stock owners have no conception of this and look upon State measures as a sort of special Providence, to relieve them from an immediate and inevitable loss. The man who has a dying tuberculous cow wants the State to anticipate its death by a few days, or weeks,

and to pay him for what would otherwise have been a total loss. But for the State to go further, and rid his herd of every other tuberculous animal, even though it may be yielding a remunerative flow of milk, or producing, year by year, a valuable pedigreed calf, he is less ready to approve of. Yet unless this thorough purging of the herd is aimed at, it must be evident that it is a prodigal waste of public money to kill and pay for the animal that is so far advanced with the disease as to be useless alike for the dairy, the breeding farm and the butcher.

It may be set down, then, as an inviolable principle of action, that no State interference is justifiable unless it has for its aim the extinction of tuberculosis in the herd. This may be extended by saying that State action is only justifiable when its purpose is the purging of the herds of the whole district from the infection of tuberculosis. If infection is left in the herd or in the district dealt with, not only will the products furnished by such herd or district prove poisonous in various degrees to the consuming public, but sooner or later the latent or occult cases will, in certain numbers, assume a more active type of disease, spread it in the herd and from herd to herd, and increasingly endanger the products offered from the dairy and the butcher's stall.

There is no sufficient warrant for making legislative appropriations and instituting State sanitary work in this direction, unless such work aims at a complete extinction of the bacillus tuberculosis in the herds of the State, or of the district to which such sanitary measures are applied. The two questions that confront us are :

1. What measures will give us a reasonable expectation of the extinction of tuberculosis ?

2. Are such measures available and practicable in the State of New York ?

In response to the first question, two different methods offer themselves for choice, which may be named respectively the *radical and progressive* methods. The consideration of these may answer the second question as well.

1. *The Radical Method.*—In this method all the herds of the State would be examined and tested with "tuberculin" as speedily as possible; the diseased animals would be condemned, appraised, killed and safely disposed of; the premises disinfected; other genera of animals that have cohabited with the diseased would be examined, and, if necessary, safely disposed of; vermin would be killed, and all consumptive persons would be debarred from attending on the purified herd or preparing their food. Finally all new purchases would be kept apart from the herd until they had been tested with "tuberculin." In this way every step would be so much clear gain, and what had once been accomplished could be looked upon with reasonable confidence as a permanent success.

Without entering into the details of such a scheme, and while allowing that it would prove the most efficient, and in the end, perhaps, the most economical resort, it may suffice to estimate the cost, and to consider whether the requisite number of thoroughly trained men could be secured for professional inspectors.

The meat cattle of New York are, by the census of 1890, 2,328,015 head, and to test these in one year, at the rate of twenty per day for each inspector, would require 360 professional inspectors. The ratio of tuberculous animals is probably 5 per cent., amounting to 116,400, and the post-mortem examinations of these at the rate of twenty-four per day for each inspector, would require 16 more inspectors for an entire year. The expense account might, therefore, be expected to include the following:

Indemnities for 116,400 cattle, at $25,	$2,910,000.
Inspectors, 376, at $1,500, - -	564,000.
Administration expenses, - -	10,000.
Total, -	$3,484,000.

By many this will be considered as prohibitory, though when taken in connection with the disabilities and deaths from tuberculosis in man, and the losses to our herds and products, it need not be condemned on the score of expense.

Another objection is the difficulty or impossibility of at once

securing and putting in the field the requisite number of veterinary inspectors, who could be intrusted with the delicate work of testing cattle with "tuberculin." Duties which involve so fundamentally an interest so large and so important as our dairy herds, should demand that all candidates for the inspectorship should pass a thorough examination in the diseases, dietetics and hygiene of cattle, and in the applications and uses of "tuberculin." No less important is it that they should be certified to be of good moral character and unimpeachable integrity. Much delay would be incurred in applying such tests or in training the requisite number of reliable men, so that it would be impossible to enter upon the whole field for a considerable time.

Another hindrance would be the difficulty or impossibility of securing at once a sufficient supply of a reliable brand of "tuberculin." With a fully equipped State veterinary college the work of preparing this agent might be undertaken there, but with this institution still in embryo this is impossible.

We may turn, therefore, to the second or progressive method as being more promptly available.

2. *The Progressive Method.*—By this method one reliable veterinarian would be allotted to each county or other suitable district, whose duties it would be to make and keep a census of all bovine animals, and a record of all additions, sales, and deaths, and to make a post-mortem examination in case of any death from disease or slaughter because of disease. He would also be called in by any butcher who found what he believed to be tuberculosis on opening an animal. On the discovery of a specimen of tuberculosis, the inspector would submit this to the diagnosis of the chief veterinarian, and on his corroboration the whole herd in which such animal had been would be subjected to the "tuberculin" test, and those found tuberculous would be condemned, appraised, killed, and safely disposed of and the premises disinfected. Similar precautions, as under the *radical* system, would be adopted toward vermin, toward other animals that had cohabited with the diseased, and toward tuberculous attendants and new purchases.

This would speedily purify all the dangerously affected herds, and would not fail to reach, sooner or later, all herds in which any tuberculosis whatever exists. The final result, therefore, would be as thorough as under the more speedy and radical system. It presents at the same time certain features, such as the comparative absence of immediate expense and the absence of serious disturbance of the cattle industry, of panic or excitement, which will serve to recommend it. The salaries of inspectors, even if seventy were required at $1,500, would amount to but $105,000; the indemnities would be in gradual demand, and not called for all at once, and many of the latent cases of tuberbulosis would meanwhile find their way to the butcher, and thus reduce the outlay. We might well follow the lead of Belgium, Germany and other countries of Europe, in allowing a reimbursement of one-fifth the value for any tuberculous carcass that had been slaughtered in good faith for human food, as this would at once withhold from the market a dangerous article and secure an evidence of the existence of tuberculosis in the herd from which the animal was drawn.

This *progressive method* would be much more easily and promptly introduced. The smaller number of inspectors needed would allow of the choice of better qualified men, and the chances of error by men new to the work would be reduced to a minimum, as all first cases in a herd would be subjected to the professional chief, and all first tests would be under the immediate direction and observation of such chief, or of an experienced inspector. Thus, the new inspectors would be gradually made acquainted with all the details of the work and the precautions to be taken in carrying it out. The stock owner would have every possible guarantee that no hasty nor ill-advised action would be taken in putting his herd to the test, as no such step would be taken until the disease in the first case had been passed upon by the best authority. The protection of the stock owner could be still further secured by the avoidance of publicity in the case of tests applied and cattle condemned. There would be a large economy secured in the fact that the tests would at

first be applied only or mainly to herds in which advanced or dangerous cases had appeared, and that the non-tuberculous herds constituting a very large proportion of our State cattle, would never be subjected to the expensive test at all, but would remain throughout above suspicion.

The amount required for indemnities under this method is so uncertain that it is difficult to settle on the sum necessary to conduct the work for one year, but with $100,000 for inspectors and an equal amount for indemnities and administration expenses, the task could be commenced with a fair degree of confidence.

3. No other plan can be at all compared to the above, nor indeed justified as a State measure for the suppression of tuberculosis. The method now in force in New York and Massachusetts, of furnishing examination, "tuberculin" test and indemnity on herds, the owners of which apply for this, and leaving all others untested, will temporarily purify a large number of the most infected herds, but it is not likely to rid a district of the infection, and the tuberculous herds that remain will sooner or later reinfect the neighboring herds that have been thus purified. The gain, therefore, is very partial, temporary and uncertain, and there is no means of preserving what has been acquired. It lacks too, in the matter of evenhanded justice; as the stock owner who fails, through ignorance or otherwise, to apply for State help is excluded from the benefit, while the more intelligent owner, who has sought and obtained such help, is still left in constant danger of reinfection from his neighbor's tuberculous herd.

The alternative of having city or other boards of health insist on the testing of all cattle engaged in furnishing their milk supply, is liable to exactly the same objection. One herd furnishing sweet milk is tested, and two others on the two sides of it, devoted to the production of butter and cheese, are left untested. The extinction of the disease in the district has not been accomplished, and the opportunity for reinfection from the adjoining herds, are too frequent to allow of the guarantee of the tested herd remaining of value for any length of time.

Such methods are wasteful and uncertain, and are utterly inadmissible, when the State can step in and accomplish a work that will be of permanent value.

It is not for a moment intimated that these other partial methods will be without benefit. It is freely conceded that they will greatly diminish the advanced, aggravated and most dangerous cases of the disease in live stock, and will have an appreciably beneficial influence on the public health. It is merely alleged that they are not calculated to eradicate the disease from our herds, to accomplish systematic and permanent work, such as the veterinary sanitary science of to-day demands as a right, because it has, with our light, become a possibility.

The temporizing methods may be well likened to an attempt to clear a field of couch grass *(triticum repens)*, by digging it out and thoroughly purifying a square rod here and there at different parts of the affected field. At first these laboriously cleaned patches would be beautiful and productive, but in a year or two they would be again overgrown by the weed and the care and labor would have been all in vain.

We might well take a lesson in these things from the experience of the past. In the eighteenth century it has been estimated that Europe lost 30,000,000 head of cattle by the rinderpest. Towards the middle of the century it invaded Great Britain and threatened the virtual extinction of the bovine race. As many as 30,000 head were lost in a few months in the one county of Cheshire. It was only when the movement of cattle was stopped, the infected slaughtered and the places disinfected, that the disease was speedily extirpated. Again, in 1865, it was introduced, and those of us who, knowing of the past, advised the same stringent measures, were derided and abused, until in six months, 17,000 a week were being attacked, when, driven to desperation, the authorities once more applied the most stringent measures, and in a few months more the plague had been stamped out.

The lung plague of cattle imported into England in 1839 suffered a similar neglect, and prevailed for over fifty years, be-

cause the advocates of temporizing measures prevailed. Finally, in 1891 to the existing measures for slaughter and disinfection there was added the prohibition of movement of cattle in all infected districts, and the disease was wiped out. Professor Brown, director of the veterinary department, in his report for 1893 draws attention to this final and effective restriction which had crowned all previous efforts with the long-wished-for success, and how the same measure had been equally successful in regard to foot and mouth disease and ovine smallpox.

Into America the lung plague of cattle was imported in 1848, and spread from its first center in Brooklyn to Connecticut and south as far as Virginia, and finally into several herds in the Mississippi Valley, and into the very center of our cattle traffic in Chicago. In 1887 the most rigid control of the infected area in Illinois was instituted, and in three months the last acute case of the disease had been reached, and the infection was wiped out in the West. Immediately the same system was put in force in the infected States in the East, and by 1892 the continent was pronounced clear of the plague.

All this had been done in the face of the most violent abuse and denunciation, such as had previously opposed the same measures in England, but those who were the most violent in their attacks are to-day the most forward to recognize the benefit secured, and to pledge their support in any future effort of the same kind.

All over the world the experience has been the same. The central countries of Europe, while temporized which animal plagues, preserved them in their midst, while those which, like Switzerland, Holstein, Denmark, Oldenburg, Norway and Sweden, sought, by rigid and systematic measures, to extinguish the last germ of contagion in the herds, made and kept their herds sound.

It is not contended that the parallel is exact, because tuberculosis cannot be thus completely and speedily eradicated from the land, for the reason that man himself harbors the infection; but this does not alter the general principle that in

dealing with the disease in our herds our aim and strenuous effort must be to first annihilate the microbe in our herds and stables and then to prevent a re-entrance, under which latter head will come the exclusion of all tuberculous persons from dealing with herds. The disease, as it exists in man, must meanwhile be wisely dealt with by our boards of health.

STOCK OWNERS SHOULD HAVE FAIR INDEMNITIES.

One of the greatest obstacles to the success of laws enacted for the extinction of contagious diseases in animals, is the lack of just and reasonable arrangements in the matter of indemnities. The largest experience in this matter produces the strongest conviction that any unwise attempt at economy in this matter is really the worst prodigality, because, if it does nothing else, it delays, or renders impossible the final extinction of the disease.

The position that, because an animal is affected with a contagious and dangerous disease, it is therefore worth nothing or less than nothing, apart altogether from its untruth, is a most suicidal position for any State working for the extinction of a contagion. With a number of our animal plagues, and notably so with tuberculosis, there is a large proportion that pass unsuspected, and fill the pail or even lay on fat as if they were sound. To deny indemnity for such animals, is to tempt the owner, who has lost a cow at intervals, from this disease, to market his whole herd, scattering the infection in a dozen, a score, or several score of new localities. Worse still, it tempts the unscrupulous dealer to buy, at a low figure, the herd of a farmer who has met with one or more cases, and to sell them out again at full market rates. Thus both seller and buyer are victimized, and the disease is spread simply for lack of indemnity.

To make the indemnity one-half of the appraised value, as at present in New York, does not remove this evil. The temptation of half the value is too attractive a bait to hold out to the man whose needs perhaps are great and his moral nature weak. The stock owner knows that if these animals were left in his

hands, they would enable him to fill his contracts, would prevent the loss of trade, or the danger of loss, and would provide the bread and butter for his children. He feels that the State is to a large extent confiscating his property, and perhaps ruining himself and family; and can we blame him if he feels that he is being unjustly dealt with, and if he is tempted to get even with the State, by selling his stock at market prices and purchasing a new herd from what is understood to be a healthy locality? If he is prepared, as is likely to be the case, to sell below the market rates, the dealer is tempted in his turn, seeing he knows that in the public market he can make a large profit by trading in these cattle. Even if this risk is escaped, and a conscientious stock owner informs the government that he has tuberculosis in his herd, and if a number are condemned, the low indemnity is a constant temptation to the appraiser to do violence to his own conscience, because he feels that the stock owner is being unjustly dealt with. He is under constant temptation to appraise above rather than below, or exactly at what he considers the true value. Thus, all round the system is calculated to corrupt the citizen, and what is of more immediate consequence, it is very highly calculated to defeat the ends of the law.

We are told that appraisers cannot be trusted, and that with a high indemnity the State will be made a means of marketing cattle that would otherwise be unsalable. But if this is so, how much worse must it be if the appraiser has continually before his eyes the fact that the State is acting unjustly toward the citizen and forcibly seizing his property at half its value? Is this calculated to make appraisers more scrupulous or more trustworthy? The State must secure trustworthy men, but it must show them that the action of the State itself is rigidly just.

In stamping out the cattle lung plague in Illinois, and New York, the full appraisement was paid for each animal, and the appraisers, drawn in the two States from the two great political parties, administered strict justice as between the government and the citizen. From my personal knowledge I can vouch for their absolute integrity, and I do not hesitate to say that with-

out this justice, and without such integrity, it would have been utterly impossible to stamp out that disease in the short time spent on it, if indeed it had been possible to do so at all. Men of skill in appraising cattle, and of incorruptible honesty and honor, are still to be had, and the appointment of such men as appraisers is essential to success. To proceed on the assumption that appraisers are not to be trusted, and to put down the indemnities to guard against this, is simply to make a bid for dishonesty all round, and to delay success or to make it impossible.

Indemnities must of course be apportioned according to the skill of the appraiser. The actual value for the butcher, or for the dairy, or for raising a high-priced pedigreed calf every year, must be taken into account, and a just estimate arrived at in the case of each particular animal. Some animals that are beyond all usefulness, either for the butcher or dairy, might possibly be worth their hides, while others giving an extra large yield of milk to be sold sweet at four cents to ten cents per quart would bring a handsome price. But with a fair appraisement the community could not be wronged by allowing four-fifths of the appraised value as indemnity, and such approximation to the real value would make every stock owner the helper of the officials, ready and anxious to have his herd cleared of the infection. Better a thousandfold that the unfortunate stock owner should have such a measure of justice than that the same money should be expended in police restrictions and costly inspections.

The stock owner, whose animals are condemned, does not simply lose his stock, which if they were well enough to be a source of income, is a serious loss in itself. In addition to this, if he is a dairyman, he must do his utmost to get milk to supply his customers, he runs the risk of publicity and of the loss of his customers, he must buy in the open market, and he runs some risk of getting similar infected animals; he is at present put to the expense of slaughter and burial of the condemned, and of a thorough disinfection of the premises where they have been. The mere value of the cattle condemned is by no means the sum

of his loss. If he were to market his suspected animals, nearly all of these incidental losses would be avoided. For animals that were actually or prospectively remunerative, even the full appraised value comes far short of the owner's actual losses. It would be an approximation to justice, therefore, and as contributing to an early success, a measure of the wisest policy to allow four-fifths of the appraised value of the condemned animal.

Other safeguards could be applied; any wilful violation of the law could be punished by confiscation and fine; animals not more than three months from another State could be taken without indemnity, and inspectors, appraisers and owners could be made to swear to the truth of their respective certificates.

In the matter of expropriation for the public good, and indemnification, the two cardinal principles of justice must be kept inviolate. (1) *A man may not do with his own what will hurt another's;* and (2) *No reputable private property may be taken for the good of the commonwealth without due compensation.* To do otherwise is at once to do an injustice and to defeat the object of the sanitary work.

NEED OF UNIFYING THE STATE CONTROL OF ANIMAL PLAGUES.

Economy and Efficiency.—The existing New York legislation for the suppression of contagious diseases of domestic animals has grown up under cases of urgency of special contagious diseases, and successive bills have, unfortunately, vested the authority in different officials and departments. The work cannot fail to suffer both in economy and efficiency under this arrangement. Tuberculosis is in charge of a special commission, glanders in the hands of the State Board of Health, and all other animal plagues in those of the Commissioner of Agriculture. A farmer thinks he has cases of tuberculosis and applies to the commissioner, who records the application, sends an inspector and receives a report that the cases are not instances of tuberculosis. This conclusion is entered in the

records and the matter dropped, as the commissioner has no authority to go farther. The Commissioner of Agriculture is next applied to, records the application, sends an inspector who, in due time, reports that the disease is not one with which he has to do, and he in turn records this report and drops the case, having reached the limit of his authority. Finally the stock-owner appeals to the State Board of Health, provided he has the virtue of persistency and that his cases continue in life. The Board, in their turn, send an inspector, and at last, perhaps, the goal has been reached, the disease really being glanders. But three bureaus have been successively engaged on the one case; three separate sets of inspectors have been sent to examine and investigate, and three sets of clerks in as many divisions of the government have recorded in three sets of books what only belongs to one of them. The unnecessary outlay of time and money is bad enough, but this is not all. The uncalled-for delay has cost the stock owner time and money for the seclusion of the animals, or it has furnished an opportunity for the extension of the infection to new members of his own herd, or to other herds. Now all this would be saved by concentrating this work under one head. It should be in the hands of some one who is an expert on farm live-stock and their diseases, and the inspector sent out should be an accomplished veterinarian, ready to recognize and deal with any malady of domestic animals. There would thus be no need for the duplication and triplication of the direction, inspection and records, and any dangerous contagion would be checked promptly before it had an opportunity to to make further extension.

Better Inspectors.—By having our set of inspectors in State pay a better class of such officials can be secured than if an inspector were employed by each of the three departments when wanted and sent out to deal with strictly one disease. The knowledge of the conditions and causation of disease in a district is of the greatest value in any such investigation, and if all the sanitary work for animals were devolved upon one class of inspectors, they would soon gain a knowledge of such local

conditions in each district and would be enabled to render so much the more efficient and valuable service.

The Value of a State Veterinary College in this Connection.—It is generally confessed that a main drawback to the immediate organization and successful administration of measures for the supervision of tuberculosis and other preventible diseases in flocks and herds is the lack of veterinary practitioners sufficiently educated on modern sanitary science to undertake the work.

By the acts of a few years ago veterinary surgeons have been manufactured wholesale in this State by simple registration and without any educational prerequisite whatever, until the title has come to mean practically nothing. It was this recognized need that drew from Governor Flower and the Commissioner of Agriculture the recommendation that better facilities should be provided for the protection of our live-stock by improving the means of veterinary education, and which led the legislature to establish the Veterinary College of the State of New York, and to make an appropriation therefor. To make this college and its curriculum commensurate to the task of protecting our $200,000,000 worth of live-stock, and of providing the class of veterinarians capable of furnishing such protection as a full knowledge of all modern sanitary and therapeutic methods can provide, the State must, as it doubtless will, equip that college as fully as the best veterinary college in the old world, and furnish the means of drawing to its chairs the best talent which it is possible to secure.

Value of Such Veterinary Faculty to the State.—When such a faculty shall have been secured it would be a profligate policy in every sense to leave its skill unused in the practical work of veterinary sanitary science. The man who is above all others fitted to teach the subject of veterinary sanitary science, or of veterinary prophylactics, or veterinary therapeutics is confessedly the best man to say how such special subject should be practically applied to the flocks and herds. The State will have these men in its own employ, and it will be doing an injustice to its citizens and robbing them of their just rights if it fails to

draw upon their special knowledge and skill in any effort to protect and improve the flocks and herds of the commonwealth. If the veterinary faculty are not pre-eminent in the special lines that they respectively teach the college will fail of the object for which it is established ; but if they are, as they must be, each pre-eminent in his specialty then this pre-eminence should be secured for the immediate benefit of the State, as well as for the more remote benefit which must come from the education of veterinarians.

Value of the Veterinary Faculty as Investigators.—In all veterinary sanitary work there are constant questions of pathology, of microscopy, of the influence of soils, drainage, foods, and of toxic and other plants, of bacteria and their products, of the whole new world of potencies connected with bacteria, of toxins and antitoxins, of ptomaines and enzymes, of albumoses, nucleins and globulins, of phagocytosis and chemiotaxis, of lessened and exalted virulence and their causes, of the relative resistance of different animal fluids and tissues, and of different genera, and of the influence of life conditions on such resistance, of the toxic and antidotal effects of combinations between different bacterial products, of the different susceptabilities of the germs to the influence of environment and of disinfectant agents, and of the thousand other things that go to determine results. The laboratories of the veterinary college, fitted up by State funds for the investigation of all such subjects, are the only proper places for such experiment and investigation. This can be done nowhere else so effectively, unless the State should duplicate both laboratories and experts at a most extravagant and altogether unnecessary outlay.

The Educational Value of Sanitary and Experimental Work.—The closest connection between the veterinary sanitary work and the work of investigation and experiment on the one hand, and the State Veterinary College on the other, is absolutely essential to the maintenance of a high standard in its educational methods.

The most accomplished teacher cannot keep fully abreast of the times, unless he is constantly *en rapport* with the burning

questions of the hour; and, therefore, it is not enough that we secure the best men as teachers, but we must provide them with the means of maintaining their pre-eminence. The veterinary faculty, therefore, and the laboratory workers should be placed in the closest relation with every department of sanitary work in the field, not only that the State should secure the best and most economical service in its field work, but that the ability of the teachers in the State college should be constantly stimulated and kept up to date, and that the students should be provided with the most advanced teaching and the best ocular demonstration. The material from the field, and the questions that rise in field work should be constantly available for such demonstration and for such advancement of veterinary science. This the students have a right to demand, and this the stock owners who are to entrust their property to these students in after life have a right to demand.

Value of Sanitary Field Work in Securing Better Teachers.—The eminent scientist is not willing to bury himself where he cannot have the best opportunity for advancement in his specialty. He may decline a chair where this opportunity is restricted, whilst he would grasp at a position which offered abundant opportunity for investigation and advancement.

In every sense, therefore, in economy and efficiency, in justice to the professor, in justice to the student, in justice to the stock owner and community, it is imperative that the State veterinary college shall be kept in the closest touch with all practical veterinary sanitary work. Not in regard to tuberculosis or glanders alone, but in regard to the whole immense field of veterinary science and comparative medicine, this rule holds: that alike for the present good of the stock owner, for the advancement of comparative medicine, and for the education of our future practitioners of comparative medicine, our veterinary college of the State of New York should be very fully equipped in material and talent, and that both should be availed of as far as they can be, by the closest connection with the veterinary sanitary work of the commonwealth.

AN UNCLASSIFIED DISEASE OF CATTLE.

By T. B. NEWBY, D.V.S., Pana, Ill.

(A paper read before the Illinois State Veterinary Medical Association.)

On May 2, 1892, I was called to Lakewood, Ill., to examine ten head of yearling steers thought to be suffering from rabies. As we drove out from the railroad station, my patron, Mr. W——, informed me that he had bought the stock from a farmer living some miles below on a broken timber farm, and that they had been poorly fed and cared for during the winter, and consequently when purchased were badly nourished. Seven head were shown me showing no outward signs of disease, otherwise than slight stiffness and being somewhat nervous. Then one cadaverous subject of same herd, that had been dead and buried for two days, was exhumed for post-mortem examination. Whether rigor mortis had been present or not, it was wanting now; neither had any post-mortem degeneration taken place. Neither were there any gases in the abdomen, only signs of disease shown in any of the abdominal viscera, rectum omasum and duodenum; the two latter were empty, except a glossy mucous secretion. The remainder of the bowels were nearly empty, but rectum mucous membrane was inflamed, dark, and contained a little fæcal matter; rumen reticulum and abomasum contained considerable food, which seemed to be arrested by impaction of third campart, yet not bad enough to warrant any such conclusion. Air chambers and mucous membrane of superior maxilla were inflamed throughout. For want of adequate instruments, brain and spinal cord were not examined, but Dr. G. A. Johnson, of Sioux City, Ia., having considerable experience with this disease, fully describes the condition of the brain, which I quote from *American Veterinary Review*, Volume XVIII., page 274. When these were opened, marked lesions of inflammation, especially the brain and all the membranes, particularly the pia-mater, showed marked inflamed

areas, and the cavities contained inflammatory exudate, while those of the spinal column contained fluid and the membranes were inflamed. That portion of pia-mater covering antero-inferior part of cerebrum, besides being inflamed was also of a dark color. The arachnoid space was filled with a serous-like exudate, and ventricles of brain were always filled with inflammatory exudate containing blood and fibrous clots. Next I was taken to a small pasture where two of the herd had been isolated.

Symptoms.—Great distress, nervous and nervous agitation, constantly moving, and bellowing, occasionally would lie down or push the head or nose against the ground or some object, but never quiet; would sometimes show a combative spirit, but when approached would become quite inoffensive. A constant straining, as if trying to defecate; rectum mucous membrane dark colored, respiration quick, pulse small and wiry, and difficult to take correctly; temperature 106° F., power of deglutation gone, pupils fully dilated, mucous membrane of the nose inflamed, secreting a dark-colored fluid, throat and tongue covered with detached epithelium. Animal destroyed.

Necroscopy.—Very near same as first; omasum contained some small gravel and other foreign matter, stomach and bowels nearly empty; no other differential changes.

Was this rabies? No, I think not. While the outward symptoms casually resembled rabies the post-mortem revealed that such was not the case. While I have no objection to the term pseudo-rabies, it is likely to become confusing and misconstrued by the laity. When the malady exists in the neighborhood there is often much interest manifested, and if asked, Is this rabies? I would say no, if I were positive, and then the disease in question would assume a different phase in the minds of parties interested. Dr. Trumbower, State Veterinarian of Illinois, saw these cases twice, but held no autopsy, and in conversation with him said he believed the trouble was not rabies but was undecided. There were ten head of them brought to the farm, and eight out of the ten took

the disease, each in its turn, during a period (from first to last) of about three weeks, living from two to five days, and died. I believe the cause to be a specific one, but shall not attempt to define it. To convince myself that this could not be impaction I gave a cathartic, which acted promptly, but symptoms never abated. I believe it possible that some organism had invaded the body; likely by way of alimentary tract, as their appetite had been abnormal after a winter's semi-starvation, and as they had taken of some provender that had lain and decomposed through the winter—(and possibly in this was a germ with power of production)—as well as the first signs of grass and early vegetation. It might easily be accounted for, but whether correct or not is largely speculative. But thanks to our journals and societies, for if it was it not for them we might think each year that we had discovered a new disease unknown to others; for our standard works and text-books do not contain them all. Pardon me, but I consider no man a local practitioner that never reports anything, *i. e.*, if he has a subject out of the regular line, of benefit to his fellow-practitioner or public health, for it is only in this manner that unclassified diseases are kept track of and intelligently dealt with.

IS IT A VEGETABLE TOXICUM?

By Dr. J. C. Meyers, Sr., V.S., Cincinnati, O.

(A paper read before the Ohio State Veterinary Medical Association.)

My attention was attracted by a report in the daily papers of a disease, apparently caused by poison, among dairy cattle in a suburb of Hamilton. As the papers stated, twenty-five out of a herd of sixty, died.

Being interested, I telephoned to a regular veterinarian of Hamilton, but nothing further could be learned, as he was not the veterinarian in charge.

I was inclined to believe that some infection or contagion might be the motive for keeping the affair secret, to prevent interference from the sanitary police, etc.

As it is the duty of the Live Stock Commission to investigate and prevent the spreading of transmissible diseases, my son, assistant State veterinarian from this district, who was unable to go, and immediate action being necessary, requested me to look into the matter.

On the morning of December 18, 1893, I arrived at the dairy farm. Notwithstanding my haste, I was far behind hand to find any trace of the source of the emergency, and was obliged to be satisfied with anamnestic reports; this was not surprising to me, however, as it is customary, when anything occurs in a dairy establishment, which is likely to create alarm, the manager will soon arrange it so that disinterested parties will not become initiated with the affairs within. Really such precaution is excusable policy.

The owner, as well as one of the attending practitioners, who happened to be present, willingly showed me the five animals still on the sick list. Credit must be given to Dr. H., who is an empiric, in that he did not overdose his patients with digitalis, belladonna, aconite, etc., which were administered; on the contrary, he undoubtedly rendered satisfactory services by reason of his being cognizant of the efficacy of these drugs.

One cow, an Alderney (under treatment by another doctor), was found in a comatose condition, which might have given rise to the suspicion that the animal was influenced by narcotics, had I not known that her palsy-like manifestation was a frequent sign of toxical diseases.

This Alderney is now sick thirteen days, and cannot get up since the fourth day; lies on the right side, and we may say is motionless. Upon touching the eye-ball, she shows but little reaction, her sight seems to be impaired and the corneas pellucidæ have lost their lustre. The buccal membrane and tongue are ashen gray and besmeared with a greasy-looking mucus. Respiration 12°, circulation 56°, and scarcely perceptible, as is

also the heart beat; peristaltic very feeble, slightly tympanitic. This cow died on the following day.

Post-mortem examination fourteen hours after death. Carcass rigid, not tympanitic. Upon dividing the abdominal covering, the blood-vessels discharged black semi-liquid blood, the gas emitted from the abdomen was of an extremely bad odor; no serum escaped from this cavity, nor from the thorax. Bowels looked bluish, contents greatly diminished, soft and of a disagreeable smell. Rumen filled with half masticated hay, notwithstanding the cow refused all but liquid nourishment, with which she was drenched for nine days. Mesenterium spotted with ecchymosen between its leaves, perhaps one-half dozen in number and ranging in size from a pea to a cherry. Reticulum occupied by a handful of grayish mushy food. Omassum, which was diminished in circumference, was nearly empty, only a few cakes ready to fall apart were found; the epithelium which still adhered to its leaves was of a dark brown color. Abomassum greatly contracted, mucosa besmeared with about one-half pint of semi-liquid, grayish, offensive compound. Small intestines nearly all empty, lining of a bad color and smell. Large intestines also contained much less than usual, the color and consistency resembling yeast. Spleen reduced in size, its surface ashen gray, pulp of a somewhat purplish tinge. Liver also diminished, flabby, of a putrid odor and soft, approaching decay. Gall-bladder two-thirds full of bile, molasses-like in appearance. Kidneys a trifle softer. Both substances united in color, appear melanæmic. Fatty tissue was nowhere to be found. The exterior and interior of the heart of a dark-reddish aspect; its ventricles and auricles thoroughly filled with dark-purplish coagulated blood. There was a scarcity of blood everywhere else. The lungs were the best preserved organs of all; the right lobe slightly darker colored, front end looked rather fleshy, but would float.

Being obliged to meet another engagement at a certain time, I could not remain any longer, consequently the skull and spinal cord, which might have furnished the most decisive disclosure in this problematic question, were not opened.

The nourishment, consisting of gruel and flaxseed meal tea and medicines, all of which the cow received in drench form for nine days, seemed to have the effect of ridding the reticulum, omassum and abomassum of accumulated food, which stomachs, as stated above, were nearly empty, and looked as if they were washed out. The rumen, on the contrary, was so full of coarsely masticated hay that it might be called overloaded, notwithstanding the fact that not a particle of solid food was added to it ever since the cow got down.

A remarkable feature to me, was the contrast between the fullness of the rumen and the emptiness of the other three stomachs. Why the contents of the rumen was not more softened is also singular, but Professor Pott informs us that part of the liquid which ruminants drink enters first into the reticulum, and from there into the rumen; and the rest, by means of the œsophagus groove into the omassum and abomassum. When the animal is capable of a full swallow, which is from 500 to 700 grams, the greater part will flow into the first two stomachs. Judging by the above explanation, the rumen in this case did not receive its share, as in drenching the swallows are small, in fact it is doubtful whether the cow was able to swallow at all, as the pharyngeal muscles are commonly paralyzed in cattle afflicted thus, when drinking is impossible, but liquid food, if carefully administered, will reach its proper destination.

Another cow, four years old, of Holstein breed, is thin in flesh, as most of her companions; has not eaten much since she first took sick ten days ago; a foam-like saliva drips from the mouth; eyes squint, bulbus nearly normal. Coughs often and forcibly; respiration 16°, circulation 50°, vesicular murmur a little heavier and plainer. Stands and moves about without showing much weakness. When standing, the muscles of the posterior extremities shiver, which is not perceptible when lying down, nor can any pain be detected by palpitating that region. Discharge from bowels regular, but in small quantities. Appetite improving. Rumination has not yet set in, nor has the production of milk.

The other three animals have so far convalesced that therapeutics are discontinued, judicial care being considered fully sufficient to restore them.

At the outset I suspected contagion or infection to be the agent of this loss, but the symptoms failed to verify such a supposition, consequently the cause must be attributed to the food, consisting of corn, cornstalks, hay and malt, which the cattle had been fed on some days prior to their taking sick.

Dr. H. claimed the hay could not have been better, but as the cattle had not received any for a week or more, they ate hastily, not chewing it properly. The malt, which was all consumed, had been stored through the summer and may have been defective. The stablemen did not consider the cornstalks faulty, but allowance must be made, as these people do not attach much importance to quality.

I was suspicious that the stalks, not a vestige of which was left, was tainted with ustilago maidis, the poisonous virus generally hidden either in corn, cornstalks, meadow-grass or hay, which, when eaten, is very apt to attack the sensorium and spinal cord almost simultaneously with the ganglion nerves, developing such ailments with but few if any premonitory signs.

The herd of cattle, together with another lot, were watered from the same creek, and not one of the latter took sick, a proof that the food alone is responsible for the harm done.

Dr. H.'s description of some of the symptoms of the cattle which died within the first twelve hours, is as follows: They would become wild and frantic, break chains and ropes with which they were tied; rear, plunge about, fall down; roar, bawl, and moan piteously, and discharge a dry manure every little while until death relieved them.

We are aware that these symptoms are not characteristic. Some of them are often exhibited in suffocation, brought on by tympanitis. But Dr. H. says that none of the animals under his charge were tympanitic enough to produce suffocation.

If we would have had but one case to judge by, it would have been a difficult task to find criterions upon which we could

depend, but when three, four and more turn up with similar symptoms, they may be diagnosed as related to ustilaginun poisoning.

Professor Frochner's "Toxicologie for Veterinarians," contains a description of symptoms and post-mortem results, caused by ustilago toxicum, which corresponds with cases I have had opportunity to observe several times, leading me to believe that this malady belongs in the same category. Frochner claims that the opinion prevailing to some extent, that the entrance of the poisonous spores into the blood circulation takes place in a physical manner, is erroneous; but that it is effected by the formation of a ptomainlike body, which besides irritating the mucous membrane has the additional property of paralyzing the pharynx and spinal cord.

In order to satisfy themselves as to the certainty of the fatal termination of cattle upon eating ustilago maidis, a few experts made trials with this parasitic fungus, but instead of producing death, as was the case of those which partook of it accidentally, the gestation organs were influenced to such a degree that abortus followed.

According to the results of these experimental attacks upon the system, it appears that under certain, as yet inexplicable circumstances, the gestation organs are more susceptible to the poisonous virus than the sensorium and its membranes.

HOMOEOPATHY IN VETERINARY PRACTICE.

By Prof. C. E. SAYRE, M.D., D.V.S.,

(A paper read before the Illinois State Veterinary Medical Association.)

(Continued from page 768, and concluded.)

Enough of the history of homœopathy. The practice of homœopathy in the veterinary profession has been confined to unqualified practitioners and stable men almost exclusively. And what seemed very strange to me was, that when intro-

duced into a stable, with very few exceptions, it was always used. The following statistics of one large stable had considerable weight with me in deciding to investigate homœopathy:

Years.	*No. of Horses.*	*No. of Deaths.*	*Per Cent. of Loss.*	*Method of Treatment.*
1881	90	5	5 1-2	Veterinarian employed.
1882	92	5	5 4-10	" "
1883	92	None.		" "
1884	104	3	2 8-10	Both methods of treatment.
1885	106	1	9-10	Homœopathic treatment.
1886	112	None.		" "
1887	112	2	1 7-10	" "
1888	120	2	1 6-10	" "
1889	120	4	3 2-10	Two under allopathic treatment.
1890	120	2	1 6-10	One broken back.
1891	120	1	8-10	Treated allopathically.
1892	120	None.		Homœopathic treatment.
1893	130	1	8-10	" "
1894	113	None.		

The cases treated allopathically were taken away sick from the stable, and a veterinarian called.

On examination of this table we find that the percentage of loss is greatly in favor of homœopathy. The objection to this may be raised that there were only three years of statistics under allopathic treatment, while there are nine years of homœopathic treatment. If we take the worst three years, 1888, 1889 and 1890, two deaths under homœopathic treatment for each year, we find that the percentage is still greatly in favor of homœopathy, as there are but six deaths, to ten in the three years under allopathic treatment. Then, too, we must take into consideration that these animals were not treated homœopathically by a professional man, but by the superintendent of the stable.

Another large stable, averaging one hundred head of horses, have treated their own stock for the past ten years, but have not kept a record of their losses; but the superintendent tells me that, from memory, they have lost one to where they lost eight allopathically, and they employed one of the best veterinarians

in Chicago. The superintendents of both were not believers in homœopathy when it was first used in their stables, but the loss was so much less that they were compelled to adopt it. They are now both staunch homœopaths.

In my own practice I have not kept any record whereby I can give any statistics. But I have certainly met with remarkable successes. During the winter of 1892 and 1893 I treated twenty-nine cases of azaturia (which under allopathic treatment we expect to lose 75%) homœopathically, and lost four. The winter of 1893 and 1894 I treated thirteen, and lost none. This winter I have treated but two, and lost both; one of these, a large 1,800 pound horse, laid in a stone quarry all night, and had been down twenty-four hours before I saw it. He improved considerably, and got so he could walk about for fifteen minutes at a time, but the bruising he received on the stones caused immense sloughs in his shoulders and hips, which, I think, was the cause of death.

For three years I have treated all cases homœopathically, with the exception of some few cases of colic, which had received large doses of opium before my arrival, when I have found it necessary to administer a cathartic to counteract the effect of the opium. In the three years I have not found it necessary to use a trochar more than once on the same patient, except in one case, as the homœopathic remedy prevented the further formation of gas, and all cases have been ready to work the next day (except those mentioned which had received a cathartic), as there was no drug disease to recover from. I have lost some cases, but very few; on three of those I have held post-mortem examinations; two had ruptured stomachs, and one a ruptured colon.

Colocynth and carbo-vegetabilis are the remedies most frequently indicated in colic. In the proving of colocynth we find "gripping in the epigastrium, cramps in the stomach, pain relieved bending double, abdomen distended, tympanitis, incarcerated flatus, diarrhœa, stool accompanied by a great discharge of wind." Some of these symptoms are to be found in nearly

all cases of colic, and colocynth will relieve nine-tenths of them, and very quickly.

In those cases of gastric flatulence in which the gas is in the stomach, and cannot be reached with a trochar, the horse constantly retching and eructations of gas, I have found the carbo-vegetabilis acts like magic.

In the provings of carbo-vegetabilis we find "colic, with flatulence, *stomach full to bursting*, abdomen distended."

A few years ago I was called in consultation in a case of impaction of the colon, which seemed hopeless. The patient had received large doses of cathartics, with anodynes, but the pain kept up. A short time before my arrival the attending physician had given a mixture, which contained a drachm of the fluid extract of gelsemium, alcohol and some other remedy, which I have forgotten, in an eight ounce mixture, giving one-half ounce every half hour. The dose of gelsemium in this mixture was about four minims, certainly a very small dose for a horse. I made some such remark at the time; the doctor agreed with me, but said the patient seemed to be relieved more by this mixture than anything he had given, and that he had administered it before with good results. The patient recovered.

I thought very little about it until shortly after I began the study of homœopathy I was called one evening, about 6 o'clock, to see a valuable two-year old colt, which I found lying at full length, looking occasionally at his side; pulse 44, temperature normal. On inquiry, I found that his bowels had not moved all day, and peristaltic movements could not be heard; so I made a diagnosis of impaction of the colon. The next thing was a homœopathic remedy for the case. He had drank no water for twenty-four hours. Here was a good symptom, *thirstlessness*. I could think of only four remedies in which this was a prominent symptom: gelsemium, pulsatilla, nux moschata and apis; so I concluded it must be one of these. I happened to think of the case in which the small dose of gelsemium had been given; this made me decide on gelsemium.

I must confess that it was with some misgivings I put a few drops in a four-ounce bottle, and ordered a half ounce every half hour until my return, which I did in about four hours, and found my patient up and eating hay. Before leaving I cautioned the groom to call me during the night if he showed evidence of pain. I called about 9 A.M. the next day, and found him comfortable, having eaten a bran mash, pulse 40, but no movement from the bowels. This was puzzling, as he had now gone twenty-four hours without a movement. I was strongly tempted to give a laxative and enemas, but reasoned if the trouble is not being relieved the pain he showed last night would have increased, he would not eat, and the pulse would be higher instead of lower. So I concluded to let him alone. About 9 P.M. his bowels moved naturally, and he was apparently as well as ever. This is a fair description of at least a dozen cases.

All cases of impaction do not exhibit these symptoms, but a great majority of them do. The great difficulty in treating animals homœopathically is the lack of symptoms which are characteristic of a remedy. Frequently we have to prescribe on one or two characteristics, whereas in human practice one can always get at least three and often a dozen symptoms, which the patient can tell. It is the symptoms of the individual case on which the homœopathist makes his prescription. It is not enough to know that a horse has pneumonia. The thirst or lack of it, the period of time in which he is better or worse, color of nasal discharge, if any, temperament, etc., all assist in making a homœpathic prescription.

The proving of remedies have thus far been on healthy persons. Before homœopathy can attain its greatest usefulness in veterinary practice, remedies will have to be proven on all of the different animals. Doubtless the symptoms are the same with many remedies, as we have found they must be in our practice, prescribing on symptoms developed in man. But there must be some differences which may account for failures in some cases.

I have treated seven cases of tetanus that I can remember homœopathically, and lost one.

I have treated several cases of purpura hæmorrhagica, and lost one, and could mention many more diseases, but this is sufficient.

A few more peculiar cases to be mentioned, and I will close:

A black dog, of uncertain breed, was brought to me, suffering from sciatic rheumatism he had had for five months, having been under treatment by two prominent veterinarians. For a month nothing had been done, as the case was considered hopeless. The entire right leg was greatly atrophied. I could get no symptoms at all peculiar, so I gave the lady that brought it a few powders of sugar of milk, and told her to call again in three days. I read everything I could on sciatica, and found in the proving of dioscorea (wild yam): "Pain in the right leg, from point of exit of sciatic nerve, felt only on moving limb."

When the patient returned there was no improvement. I then gave dioscorea, and told the lady to call in a week. She reported that improvement began in four days, and he was then perfectly well. The muscles have since developed, until now the leg is natural. The same lady had a small terrier that had been vomiting for several days. The only thing peculiar about it was that every time it drank it induced vomiting, and there was great thirst. This I thought was a clear case for arsenic, for we find, in proving of arsenic, "great thirst, vomiting aggravated by drinking cold water." I gave arsenic, but to my surprise, was telephoned for the next day to call and see the dog, which had not improved. On careful questioning, I found that the vomiting did not occur until about fifteen minutes after drinking. In the proving of phosphorus we find "great thirst, *vomiting of watér as soon as it gets warm in the stomach.*" Phosphorus was given, and that was the last of the vomiting, as I called the next day to inquire.

One evening I was called to see an English setter bitch that had been in labor for fourteen hours. She was lying completely exhausted; there were occasional twitchings of the muscles of the face and body. There had been no pains for

several hours. I made a digital examination, but could feel nothing, as none of the pups had entered the superior strait. In the proving of nux vomica we find "twitchings of the muscles of the face, pulse imperceptible, labor pains cease." Nux was the prescription, and I told the owner I would return in about an hour with forceps. It was about an hour and a half before I returned. The owner met me, smiling, saying about fifteen minutes after I left she seemed to brighten up, the pains returned, and in about half an hour the first puppy was born, and when I arrived she had five.

Hoping that what I have written will induce you to investigate homœopathy, before you condemn it, I will close with a quotation from Dr. Sharp:

"We are not entitled to reject anything which professes to be a *fact*, if supported by a sufficient amount of evidence, merely because it is inconsistent with our expectations; it does not coincide with our previous opinions, or is not within the limits of our former experience." *

TETANY; OR, REFLEX NERVOUS IRRITATION.

By Dr. T. J. GUNNING, D.V.S., Neponsit, Ill.

(A paper read before the Illinois State Veterinary Medical Society.)

In presenting this subject I may not be presenting anything new to most of the profession, and yet to some it may be of interest, especially to the younger practitioners. Tetany is altogether different from tetanus, and I think is not mentioned by any of our veterinary text-books, so far as I know, and I have used the name given by some of our ablest human practitioners. Tetany is strictly a reflex condition, while tetanus, I believe, to be a direct irritation of the nerves.

* *The Small Dose of Homœopathy.* By Dr. Sharp.

Tetany is a condition peculiar to young animals, and but seldom seen in old horses. When seen in old animals it will be likely to puzzle the ablest practitioner to locate the cause. If the veterinary practitioner will keep in mind the fact that nervous irritation is the cause of many conditions which are hard to diagnose correctly, he will bring credit to himself by curing the obscure conditions which other doctors have failed to remove. The irritating cause is often quite distant from the part affected, and may be the last place the doctor would think of looking for the cause. I have devoted some time to the study of this condition, and have made close observation for several years, especially in diseases of the eyes.

Veterinarians have made sport of me when I told them that nine cases out of ten, where the eyes were affected in young horses, was due to reflex nervous irritation, the cause generally being the teeth.

Some of those doctors have been converted, and have told me that I was right, that they had been trying to cure ophthalmia without success, and then their patients had been placed under my care and I had treated them with a pair of forceps and sent them home cured without using any medicine, and they could not afford to lose their reputation and practice in that way. I have had men bring horses many miles to me, saying that they had heard that I was an eye specialist, and they had tried Dr. so-and-so, but he could do the horse's eyes no good, and they would leave the horse with me if I thought I could help his eyes. I generally let the owner take the horse home with him, as it is only another case that Dr. so-and-so had been treating for ophthalmia when he ought to have been treating the teeth with a pair of forceps or a gum lance.

In June, 1893, I was called to see a horse belonging to an old horse doctor, a man who had practiced for over thirty years. I found the horse in a box stall, almost unable to move, with back arched, hind legs wide apart and the picture of misery. I think any doctor would have said from the looks of the horse, that it was a very bad case of nephritis. I took the pulse and

temperature and found both nearly normal. This was a stunner, and at once set me to thinking. I asked the owner how long the horse had been in that condition, he said only a few days, but had been getting worse all the time; he said there was no trouble with the bowels or kidneys that he could see, as the horse voided his urine all right and the bowels moved free enough for any horse. I asked if the horse had been hurt in any way: he said no, he thought not, but had been castrated some three or four weeks ago. I at once thought of tetany, and made an examination and found that the wound was not quite healed, also found that both spermatic cords were held down to the scrotum by adhesions, the operation having been done with clamps. I told the old doctor that it was a case of tetany, and I would have to relieve the cords from their strained condition and attachment to the scrotum. The old doctor did not take much stock in my diagnosis, but as he offered no objections, I at once proceeded to operate; after liberating both cords from the scrotum, I inserted my finger into the inguinal canal as far as possible to make sure that both cords were perfectly free, I then bathed the wound with warm water and dressed with carbolized oil. I then told them to take off the halter and let the horse go out into the yard if he could; somewhat to my own surprise, and still more to the old doctor's, the horse turned round and walked out into the yard, went to the water-tank, got a drink, and in a few minutes went to the pasture with the other horses. The old doctor said he had learned something worth knowing. I charged him ten dollars and came home feeling well satisfied, and also leaving the old doctor as well satisfied as myself. I might write much more on this subject, but think I have written enough to bring this peculiar condition to your notice. Perhaps some of you may not agree with my views, and will call me a crank as other good doctors have done, but it will be all right so far as I am concerned. I believe that if you will study and watch your cases in practice, you will be convinced as others have been, and I hope you will, and then give your experience at our next annual meeting.

SOME EXPERIMENTAL RESEARCHES ON THE USE OF MALLEINE.

By Prof. A. Liautard, M.D., V.M.

A paper presented to the Congress of Hygiene at Buda-Pest.

(Continued from page 752, and concluded.)

17th Observation. Glanders.—The same subject was used in testing another kind of German malleine:

June 13, 8 A. M., temperature 103 2-5.—Receives 5 cc. of German malleine.
" " 10 " " 103 3-5.
" " 12 " " 103 3-5.
" " 2 P. M., " 104.
" " 4 " " 104 1-5.
" " 6 " " 104 1-5.
" " 8 " " 104 1-5.
" " 10 " " 104 1-5.
" 14, 8 A. M., " 102 3-5.—He is destroyed.

The swelling at the seat of injection was smaller, less painful and not as warm as in the preceeding test.

18th Observation. Cold abcess with suppurative lymphangitis; suspicious of farcy.—Brown gelding, 9 years old; has at the base of the neck, left side, a cold abscess with lymphatic cords extending on the shoulder, which have ulcerated in two places; he has also a lymphatic abscess on the middle of the shoulder. Admitted on the 19th of June, 1893; he received 5 cc. of German malleine on the 22d:

June 19, 6 P. M., 103 1-5.
" 20, 8 A. M., temperature 103 2-5. 6 " 103.
" 21, 8 " " 102 1-5. 6 " 102 2-5.
" 22, 8.30 " " 101 2-5.
" " 10.30 " " 102 2-5.
" " 12.30 P. M., " 102 1-5.—Very small swelling.
" " 2.30 " " 102 1-5.
" " 4.30 " " 102 1-5.—The same.
" " 6.30 " " 102 1-5.
" " 8.30 " " 102 1-5.
" " 10.30 " " 101 4-5.
" 23, 8.30 " " 100 3-5.—Swelling all gone.

This animal treated for his cold abscess recovered rapidly.

19th Observation. Farcy and glanders.—An old roan horse, in poor condition; has farcinous ulcers on both hind legs

and on the body, with glairy discharge, and a small chancre on the right side. Admitted the 2d of August at 3 P.M.; his temperature registers 105 1-5°:

Aug.	3,	8 A.M.,	temperature	103.	8 P.M.,	104.	
"	4,	8 "	"	102 4-5.	8 "	102 3-5.	
"	5,	8 "	"	102 2-5.	—Receives 2 1-2 cc. of German malleine.		
"	"	10 "	"	102 1-5.			
"	"	12 M.,	"	103.	—Swelling.		
"	"	2 P.M.,	"	104 4-5.			
"	"	4 "	"	105.	—Swelling increased.		
"	"	6 "	"	105.			
"	"	8 "	"	105 1-5.			
"	"	10 "	"	105 2-5.			
"	6,	8 A.M.,	"	103 3-5.	—Swelling the same.		

Towards the end of the observation the symptoms of glanders and farcy have developed themselves very extensively.

20th Observation.—Same horse as above, in which the malleine of Roux was employed. I had it for a year and I was desirous to see if it possessed the same qualities:

Aug.	7,	8 A.M.,	temperature	102.	6 P.M.,	102 4-5.	
"	8,	8 "	"	102 3-5.	—Receives 15 drops of brute malleine of Roux.		
"	"	10 "	"	101 4-5.			
"	"	12 "	"	101 4-5.	—Swelling as a hazelnut has increased.		
"	"	2 P.M.,	"	103 2-5.			
"	"	4 "	"	103 4-5.			
"	"	6 "	"	103 4-5.	—Still enlarging, very painful.		
"	"	8 "	"	103 3-5.			
"	"	10 "	"	103 4-5.			
"	9,	8 A.M.,	"	102 3-5.			
"	10,	8 "	"	102 3-5.	6 P.M.,	102 1-5.	
"	11,	8 "	"	101 4-5.	—Receives a second dose of Roux's brute malleine.		
"	"	10 "	"	101 4-5.			
"	"	12 M.,	"	102.			
"	"	2 P.M.,	"	102 2-5.			
"	"	4 "	"	104.	—In this observation the swelling was enormous and very painful.		
"	"	6 "	"	103 3-5.			
"	"	8 "	"	104.			
"	"	10 "	"	104 1-5.			
"	12,	8 A.M.,	"	103.			
"	"	12 M.,	"	103.	—Horse is destroyed.		

21st Observation. SUSPICIOUS OF FARCY.—This is a brown gelding, which has been exposed to glanders and has under the abdomen a suspicious swelling. He is admitted September 11, 1893, registering a temperature of 100° in the morning and in the evening. He is injected with 2½ cc. of German malleine and gives the following results :

Sept.	12.	8	A. M.,	temperature	100.
"	"	10	"	"	100 4-5.
"	"	12	M.,	"	100 2-5.
"	"	2	P. M.,	"	100 2-5.
"	"	4	"	"	100.
"	"	6	"	"	100 1-5.
"	"	8	"	"	100.
"	"	10	"	"	100.
"	13,	8	A. M.,	"	100. —Not the slightest local reaction.

22d Observation. SUSPICIOUS.—An aged roan pony, in poor condition, coat staring, no discharge nor gland, a small tubercle on the left side of the septum; has been condemned as glanderous by a veterinarian.

Admitted October 26, 1893, with a temperature of 99 1-5° at 3 P.M. and in the evening. He received that day 2½ cc. of German malleine.

Oct.	26,	8	A.M.,	temperature	99 2-5.
"	"	10	"	"	99.
"	"	12	"	"	99 2-5.
"	"	2	P.M.,	"	100.
"	"	4	"	"	100 1-5.
"	"	6	"	"	100 2-5.
"	"	8	"	"	100 2-5.
"	"	10	"	"	100.
"	27,	8	A.M.,	"	99 1-5.—Has had a very small swelling that disappeared in twenty-four hours.

23d Observation. DOUBTFUL.—Black horse 7 years, has been exposed, having cohabited with three other glanderous horses which were destroyed; is in good condition, has a slight swelling on the right hind leg, the septum nasi is of a slate color and suspicious.

The temperature is normal. Admitted November 15, 1893; receives on the 16th, at 8 A.M., 2½ cc. of German malleine.

Nov.	16,	8 A.M.,	temperature	99 3-5.	
"	"	10 "	"	99 2-5.	
"	"	12 "	"	99 3-5.	—Small swelling.
"	"	2 P.M.,	"	99 2-5.	
"	"	4 "	"	99 2-5.	—Small swelling.
"	"	6 "	"	99 1-5.	
"	"	8 "	"	99.	
"	"	10 "	"	99 1-5.	—Swelling smaller.
"	17,	8 A.M.,	"	99 1-5.	—Gone.

The normal state has returned and remains till the 23d, when he receives 1 cc. of malleine from Washington.

Nov.	23,	8 A.M.,	temperature	99 2-5.	
"	"	9 "	"	99 2-5.	
"	"	11 "	"	99.	—Small swelling.
"	"	1 P.M.,	"	99.	— " "
"	"	3 "	"	99 1-5.	
"	"	5 "	"	99 1-5.	
"	"	7 "	"	99.	
"	"	9 "	"	99 2-5.	
"	"	11 "	"	99.	
"	24,	8 A.M.,	"	99.	—Swelling gone.

24th Observation. SUSPICIOUS.—Bay gelding, having the same history as the preceding one, on the left side septum nasi is abeated; both hind legs are swollen, has osteo porosis; temperature normal. Admitted November 15, 1893; receives on the 16th 5 cc. of German malleine.

Nov.	16,	8 A.M.,	temperature	99 3-5.	
"	"	10 "	"	99 2-5.	—The abrasion of the septum seems to assume the aspect of a chancre.
"	"	12 "	"	99 3-5.	
"	"	2 P.M.,	"	99 2-5.	
"	"	4 "	"	99 2-5.	
"	"	6 "	"	100.	
"	"	8 "	"	100 1-5.	
"	"	10 "	"	100.	
"	17,	8 A.M.,	"	99.	

The swelling which had begun at 12 o'clock has remained small and disappeared in a few hours.

On the 18th and 19th no change, and on the 20th he receives 2½ cc. of malleine of Roux. No special manifestation, the temperature varying between 99 1-5° and 99 3-5°. Scarcely any local reaction.

On the 23d he is once more injected with malleine, 1 cc. from Washington, without any better results or reaction.

The three kinds of malleine have answered in the same manner.

25th Observation. SUSPICIOUS.—A large brown gelding, in excellent condition, has been exposed, has repeated attacks of epistaxis; is admitted to the hospital December 15, 1893, with a temperature of 100 1-5°, in the evening of 100°. The 16th he receives 1 cc. of malleine from Washington.

Dec.	16,	8 A.M.,	temperature	100.
"	"	10 "	"	99 4-5.
"	"	12 "	"	99 4-5.—Swelling of the size of an egg.
"	"	2 P.M.,	"	99 4-5.
"	"	4 "	"	99 4-5.
"	"	6 "	"	99 4-5.
"	"	8 "	"	99 4-5.
"	"	10 "	"	99 4-5.
"	17,	8 A.M.,	"	99. —Swelling gone.

26th Observation. GLANDERS.—Large gray gelding, belonging to a brewery, has been sickly for two or three weeks; irregular appetite; variations of temperature between 101° and 103°. January 19, 1894, has a slight œdematous swelling of the maxillary glands, a small tubercle on the left side of the septum, the left hock is swollen. On the 20th the tubercle of the septum has ulcerated and another is developing further up. On the 21st the temperature is 102° in the morning and evening; the 22d it has raised to 103°, and he receives then 1 cc. of malleine from Washington.

Jan.	22,	8 A.M.,	temperature	103.
"	"	10 "	"	102 4-5.
"	"	12 "	"	103. —Small swelling.
"	"	2 P.M.,	"	103 1-5.
"	"	4 "	"	103 2-5.—Increased and painful.
"	"	6 "	"	103 3-5.
"	"	8 "	"	104.
"	"	10 "	"	104 2-5.
"	"	12 "	"	105 1-5.
"	23,	8 A.M.,	"	103 4-5.—No change.

Post-mortem.—Enormous lesions in the back part of the nasal cavities, some tubercles in the lungs, small pneumonic spots in the right lung.

27th Observation. GLANDERS.—Bay saddle horse; discharge on the right nostril, no gland, septum nasi thick and glairy, small chancre under the false nostril; temperature 100° when admitted. January 22, 1894, it rises to 101 3-5° in the evening. On the 23d he receives 1 cc. of malleine from Washington.

Jan.	23,	8	A.M.,	temperature	103.
"	"	10	"	"	103 2-5.
"	"	12	M.,	"	103 1-5.—Large swelling.
"	"	2	P.M.,	"	103 3-5.
"	"	4	"	"	103 1-5.
"	"	6	"	"	103 2-5.—Still larger and painful.
"	"	8	"	"	103.
"	"	10	"	"	103 3-5.
"	"	11	"	"	103 3-5.
"	24,	8	A.M.,	"	101 3-5.

Post-mortem.—Enormous quantity of tubercles in both lungs, large chancre on the arytenoid left cartilage, some on the back part of the nasal cavities.

28th Observation. SUSPICIOUS.—Another saddle horse, coming from the same stable as the preceding; has the lymphatus of the flat of the left hind leg, painful to the touch; is in poor condition, anæmic; temperature of 103°. When admitted had on the right side of the neck a swelling and two or three lymphatic cords under the abdomen. On February 4, at 8 A.M., the temperature is 103° and he receives 1 cc. of malleine from Washington.

Feb.	4,	10	A.M.,	temperature	102. —Small swelling.
"	"	12	"	"	102 1-5.—Larger.
"	"	2	P.M.,	"	102 3-5.
"	"	4	"	"	102 3-5.—Larger; quite painful.
"	"	6	"	"	104 2-5.
"	"	8	"	"	105 2-5.—Very large and painful.
"	"	10	"	"	105 1-5.
"	5,	8	A.M.,	"	102. —Swelling somewhat smaller.

The suspicious symptoms of farcy seem improved, but after twenty-four hours assume a more severe aspect; farcinous cords, buttons, chancres, all seem aggravated by the effect of the malleine.

29th Observation. GLANDERS.—Charley is a handsome gray horse of a brewery, in excellent condition, has a running and an ulceration very suspicious; he is kept in an infield stable. The temperature varies between 101° and 103°. On February 6th, in the evening, he registers on the thermometer 105°, on the 7th, at 8 A.M., 104 1-5, and he then receives 1 cc. of malleine from Washington.

Feb.	7,	10	A.M.,	temperature	104.
"	"	12	M.,	"	104.
"	"	2	P.M.,	"	104 3-5.
"	"	4	"	"	105.
"	"	6	"	"	105 2-5.
"	"	8	"	"	105 3-5.
"	"	10	"	"	106 3-5.
"	8,	6	A.M.,	"	105.
"	"	8	"	"	105.

30th Observation. GLANDERS.—Jack comes from the same stable, has the same history; he is in worse condition, has three small ulcers on the left side of the abdomen, a running of suspicious nature at the nose, and variations of temperature. On February 6th it is 102 2-5°, the 7th, at 8 A.M., 102°; he receives also 1 cc. of malleine from Washington.

Feb.	7,	10	A.M.,	temperature	102 2-5.
"	"	12	M.,	"	102 3-5.
"	"	2	P.M.,	"	103.
"	"	4	"	"	103.
"	"	6	"	"	104 1-5.
"	"	8	"	"	104 1-5.
"	"	10	"	"	104 3-5.
"	8,	6	A.M.,	"	103 3-5.
"	"	8	"	"	103 3-5.

These two last horses were destroyed. The local reaction was only moderate.

31st Observation. GLANDERS.—This chestnut gelding comes from the same stable as those of observations 27th and 28th. He is in bad condition, coat staring, very little running at the nose, no chancre, no gland, mucous of the septum has some abrasions. The temperature varies between 100° and 101 3-5°. This condition has existed for the last three weeks; a tonic treatment has been without result. He is placed in observation on April 10, 1894, and on the 12th he receives 2½ cc. of malleine of Roux recently imported.

April	12,	9	A.M.,	temperature	100 2-5.
"	"	11	"	"	100 4-5.
"	"	1	P.M.,	"	101 1-5.
"	"	3	"	"	101 3-5.
"	"	5	"	"	100 3-5.
"	"	7	"	"	103 4-5.
"	"	9	"	"	103 4-5.
"	"	11	"	"	103 4-5.
"	13,	8	A.M.,	"	102 3-5.
"	"	9	P.M.,	"	102 3-5.
"	14,	8	A.M.,	"	101 3-5.

The swelling appeared at 1 o'clock; has rapidly increased; has become warm, painful; at 5 o'clock the horse has had chills. The swelling disappeared only on the fifth day.

The general condition of this horse remained from that day about the same, and he was then submitted to a treatment of iodide of potash, of which he received three and four drachms three times a day, without any other effect but a slight lacrymation. After having taken two ounces of iodide without any apparent modifications, he receives May 1st 2½ cc. of malleine of Roux, which was followed by a rising ih the temperature of 104 3-5°. On May 2d the thermometer had dropped to 102 2-5°. On the 3d, 4th, 5th and 6th everything is normal. On the 7th the thermometer registers 101°; he receives 2½ cc. of tuberculine from Roux.

May	7,	10	A.M.,	temperature	101 4-5.
"	"	12	M.,	"	103. —Well marked swelling.
"	"	2	P.M.,	"	101 3-5.—Largely developed; animal very nervous.

May	7,	4 P.M.,	temperature	101 4-5.	
"	"	6 "	"	102 1-5.	—Swelling large and painful.
"	"	8 "	"	104 2-5.	
"	"	10 "	"	104.	—Animal very nervous and afraid.
"	8,	8 A.M.,	"	100.	
"	"	8 P.M.,	"	102.	—Swelling smaller.

The 9th everything is normal.

His condition remains the same until the 13th, when he received 2½ cc. of malleine prepared at the laboratory of Pasteur Institute of New York, by Dr. Gibier. The injection was made in the evening at 11 o'clock, the thermometer registering 101 3-5°.

May	14,	6	A.M.,	temperature	104 3-5.
"	"	8	"	"	104 4-5.
"	"	10	"	"	103 3-5.
"	"	12	M.,	"	104 2-5.
"	"	2	P.M.,	"	103 3-5.
"	"	4	"	"	104 1-5.
"	"	6	"	"	103 4-5.
"	"	8	"	"	103 1-5.
"	"	10	"	"	103 1-5.
"	"	11.30	"	"	103.
"	15,	6	A.M.,	"	102 3-5.

The swelling following the injection has run through the same condition; well marked at 6 A.M., it has become large, very large, warm, painful, with lymphatic cords, the animal has been very nervous and cranitive.

At the post-mortem the only lesion found consisted in a certain number of tubercles through the thickness of the lungs mixed with some of the translucide kinds of wound.

Glanderous by the malleine and by the post-mortem, yet Dr. Gibier failed to obtain affirmative results by the cultures on potatoes of the contents of the tubercules from the lungs.

32d Observation. SUPPURATIVE LYMPHANGITIS. — A bay mare, 7 years old, convalescent of a severe attack of distemper, is found one morning with a swelling of the left thigh. She has afterwards all the symptoms of an attack of lymphangitis on that leg, and one morning a small excoriation of the coronet, from which escapes a small quantity of pus. She is admitted to the

hospital on April 16th, in fair condition, with good appetite and a temperature which varies between 102 3-5° and 104 4-5°. The lymphangitis has given rise to the formation of numerous abscesses inside and outside of the leg. Are they farcinous? On the 19th of April she has a temperature of 103° and receives 2½ cc. of Roux's malleine.

April	19,	10 A.M.,	temperature	100.
"	"	12 M.,	"	102 1-5.—Small swelling.
"	"	2 P.M.,	"	104 2-5.—Larger.
"	"	4 "	"	103 2-5.
"	"	6 "	"	100.
"	"	8 "	"	105. —Swelling diminishing.
"	20,	8 A.M.,	"	103 1-5.
"	"	12 M.,	"	104 4-5.
"	"	4 P.M.,	"	101 2-5.—Swelling gone.
"	"	8 "	"	101.
"	21,	8 A.M.,	"	100.

The lymphangitis continued its course and became more and more severe, the abscesses more numerous and varying in size, the general condition suffered soon from it and the animal was destroyed. The autopsy revealed a suppurative lymphangitis of the whole leg, in which the vessels and glands, superficial and deep, were involved, and all the seat of a suppurative inflammation more or less extensive.

33d Observation. SUSPICIOUS.—Brown gelding of 7 years, belonging to a circus, has had several attacks of epistaxis, without any cause; he is admitted April 17, 1894, in good condition and submitted to a tonic treatment which seems successful. The 24th, being considered cured, he has a sticky discharge, adherent to the right nostril, increasing by degrees. Nothing else abnormal; temperature is normal. He is prepared for the malleine test, and on the 26th receives 2½ cc. of Roux's solution.

April	26,	8 A.M.,	temperature	100 1-5.
"	"	10.30 "	"	100 1-5.
"	"	12.30 P.M.,	"	102 2-5.—Swelling.
"	"	3.30 "	"	103 3-5.—Swelling painful and diffuse.
"	"	5.30 "	"	103 3-5.

April	26,	7.30	"	"	103 3-5.
"	"	9.30	"	"	102 3-5.
"	27,	8	A.M.,	"	98 3-5.
"	"	6	P.M.,	"	102 4-5.
"	28,	8	A.M.,	"	100 4-5.—Swelling almost gone.

On May 2d, the discharge has diminished, and disappeared on the 6th, the temperature varying between 100° and 100 2-5.°

The test is applied once again May 7th with malleine of Roux.

May	7,	8	A.M.,	temperature	100 3-5.
"	"	10	"	"	99 3-5.
"	"	12	M.,	"	99 3-5.
"	"	2	P.M.,	"	99 3-5.
"	"	4	"	"	100.
"	"	6	"	"	99 3-5.
"	"	8	"	"	101 1-5.
"	"	10	"	"	102 2-5.
"	8,	8	A.M.,	"	98.
"	"	12	M.,	"	99.
"	"	8	P.M.,	"	100 1-5.

In this experiment the swelling has been characteristic, warm, painful, with lymphatic cords, all of which have disappeared by the evening of the 8th. The horse has been very nervous and irritable, has had chills and uneasy; has been pawing quite a great deal.

Yet as the general reaction has been scarcely sufficient to confirm the first experiment, and as the local effect has been as positive as one could desire it, it is decided to submit him to a third test, and five days later, when everything seems to have returned to the normal state, he receives the same quantity of Roux solution on May 13th, at 10:30 P.M.

May	14,	6	A.M.,	temperature	100.
"	"	8	"	"	100 3-5.
"	"	10	"	"	100 2-5.
"	"	12	M.,	"	100 1-5.
"	"	2	P.M.,	"	100 3-5.
"	"	4	"	"	99 4-5.
"	"	6	"	"	99.

May	14,	8	P.M.,	temperature	100 2-5.
"	"	10	"	"	100 1-5.
"	"	11.30	"	"	99.
"	15,	6	A.M.,	"	99.

The swelling was very small, scarcely painful, and disappeared on the 15th.

Kept on observation for a month longer, he is submitted to a fourth test on June 12th, and gives a general and local reaction negative in all respects; the temperature varying only between 99 2-5° and 100°, and the swelling scarcely large enough to be noticed.

34th Observation. SUSPICIOUS.—Poor anæmic subject sent by the Society for the Prevention of Cruelty to Animals. Maxillary gland is slightly enlarged, some discharge from the right nostril, small abrasions on the septum. Placed on observation May 11th, 12th and 13th, without changes in his condition, he receives at 10:30 P.M. of that day 2½ cc. of solution of Gibier's malleine. From 6 o'clock A.M. of the 14th to 12 at night the temperature has varied between 100 1-5° and 99°. There has been but little local reaction, and a swelling which disappeared the next day. Returned to his owner on the 16th.

35th Observation. SUPPURATIVE PNEUMONIA.—Brown gelding of 6 years; admitted May 25, 1894, to be treated of double pneumonia, which on June 5th had passed to the suppurative stage; he is abandoned by his owner. On June 7th, while his temperature registers 103°, he receives 2½ cc. of Roux's malleine.

June	7,	8	A.M.,	temperature	103.
"	"	10	"	"	102.
"	"	12	M.,	"	102 2-5.
"	"	2	P.M.,	"	104.
"	"	3.30	"	"	105 4-5.
"	"	5.30	"	"	105 2-5.
"	"	6	"	"	dead.

During all the time of this observation, there has not been any local reaction, and the general elevation of temperature cannot be attributed to the effect of malleine.

REPORTS OF CASES.

MALLEINE IN GLANDERS.

By W. SIEGMUND, D.V.S., House Surgeon, American Veterinary Hospital.

Although a great many reports as to the diagnostic value of malleine have been published, I may be allowed to report the following case:

A brown gelding, 10 years of age, was brought to the hospital for scientific purposes. The animal, to all external purposes, although not sound in limbs, exhibited all signs of health; the eyes bright, pulse, respiration and temperature normal. Visible mucous membranes of the normal, rosy red, smooth, glistening appearance, Lymphatic glands of the inter-maxillary space normal. Appetite and thirst normal, defecation and micturition normal.

As is customary, animals secured for the special purpose of obtaining a therapeutic agent, are subjected to the test of malleine, to insure against the presence of latent glanders. The animal in question was injected with malleine at 10 o'clock one evening, the temperature being normal, 99 3-5° F.

Twelve hours after, the following morning at 8 A. M., the temperature registered 104 1-5° F., with an accelerated pulse, irritability, and a swelling several inches in diameter at the point of inoculation. The temperature varied from 103° to 104 2-5° during the day, returning to normal the following day. The swelling subsided, the membranes remaining clear.

Being a suspicious case, the animal was again subjected to the test at 10 o'clock in the evening, the temperature and pulse being normal.

The next morning at 8 o'clock the animal presented a pitiful appearance. Anxious expression, dilated pupils, nostrils dilated, mouth hot and dry, large swelling at the seat of inoculation, back arched, flank tucked up; difficult and painful defecation of hard dry fæces, driveling of viscid, highly colored urine, slight swell-

ing of the near hind leg and sheath, extreme irritability, loss of appetite, excessive thirst, harsh staring coat. The temperature registered 104 2-5° F., the pulse 70, the respiration 30. This condition continued during the day and evening, temperature varying between 103° and 105 1-5° F., accompanied with gradually increasing prostration, the animal being loath to move, almost falling down when compelled to do so.

No swelling was found in the inter-maxillary space, no discharge from the nose, no eruption on the mucous membranes.

The following day the temperature registered 103° F., the swelling at the seat of inoculation had become enormous in size, very hot and painful. Gradual increase in the swelling of the near hind leg and sheath.

The animal was condemned as suffering with glanders, and destroyed.

The post-mortem examination revealed that malleine had told the truth.

The mucous membrane of the turbinated bones exhibited only a small spot of recent eruption, that of the larynx, trachea and bronchia being apparently normal. The lungs, however, contained a few well-developed tubercles, but the entire structure was studded with an immense number of small hard tubercles of the size of the head of a small pin, granular, and of most recent formation—characteristic of pulmonary latent glanders.

With all its apparent symptoms of perfect health, this horse was most certainly unfit for the object he was bought for, *viz.*, the preparation of diphtheritic anti-toxine.

PSEUDO-CHOREA.

By D. S. WRIGHT, D.V.S., New York.

DEAR DOCTOR:—Perhaps this case may prove of some interest to your readers as an illustration of pseudo-chorea in dogs:

I was called a short time ago to see an Irish setter about six months old, which his owner stated, has frequent fits. I watched him carefully, but could notice nothing abnormal about him, and

two days later I was informed that he was worse, and that the owner had made up his mind to have him destroyed. He was sent to me, and after careful consideration of his symptoms I concluded that he had chorea. His temperature remained normal, as also the pulse and all the rest of his bodily functions, with the exception that he had a twitching of all the muscles of the body, mostly marked in the hind extremities; they would twitch to such a degree as to make him jump forward. He also had a peculiar cry, a kind of howl, which he would keep up day and night, the consequence being that several neighbors complained, and knowing the length of time pending on recovery, I decided to destroy him and hold a post-mortem. I examined carefully every organ in the body and found no abnormality till I reached the heart, which I found to have undergone a "fatty infiltration." I carefully dissected the heart and found fourteen thread-like worms about seven inches in length ("filaria immitis"). *One* was in the "right auricle," and the *rest* in the "pulmonary arteries," and a peculiarity being that they were in groups of three.

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SPECIAL COMMITTEES. *Act of Incorporation.*—Chairman, Wm. Dougherty, 1035 Cathedral street, Baltimore, Md.; J. C. McNeil, 26 Fourth street, Pittsburg, Pa.; F. S. Allen, 800 North Seventeenth street, Philadelphia, Pa.

Revision of Constitution and By-Laws.—President, W. Horace Hoskins, 3452–54 Ludlow street, Philadelphia, Pa.; Vice-presidents, J. F. Winchester, Lawrence, Mass.; T. J. Turner, Columbia, Mo.; W. L. Williams, Bozeman, Mon.; Secretary, Leonard Pearson, 2024 Pine street, Philadelphia, Pa.; Treasurer,

Jas. L. Robertson, 409 Ninth avenue, New York City, *ex-officio*. Chairman, W. B. E. Miller, 527 Penn street, Camden, N. J.; S. Stewart, 7½ St. James street, Kansas City, Kan.; Jno. M. Parker, 24 Essex street, Haverhill, Mass.

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BIBLIOGRAPHY.

Veterinary Therapeutics and Pharmacology. By E. Wallis Hoare, F.R.C.V.S. (Bailliere, Tindall and Cox, London.)

English veterinarians are at last awakening to the deficiency of English veterinary literature, and of late we have been gratified with a small number of good classical and practical works, which deserve a good place in the libraries of all veterinarians. This last work of Mr. E. W. Hoare, is one amongst them. Heretofore, Finlay, Dunn, Mortan, Gamgu, Creswell, Armatage, and a few others, were the only works on therapeutics that one could consult. "Veterinary Therapeutics and Pharmacology" comes to share part in the result of the good work intended, as an introduction to these important subjects.

The work is divided into three parts, and each one into a number of chapters, the whole of it covering ovor 500 pages of valuable readings and interesting references.

The appendix is a concise description of the prescribing and dispensing of drugs, with quite a number of valuable prescriptions, which cannot help but be of the greatest assistance to the young veterinarian and the every day busy practitioner.

Précis de Toxicologie Vétérinaire. (Treatise of Veterinary Toxicology.) By Prof. G. Mosselman and G. Hebrant, of Bruxelles. (Asselin and Houznan, Paris, H. Lamertin, Bruxelles).

Professor Dwindiddie has lately presented the English reading veterinarian with a work on "Veterinary Bacteriology," translated from one issued by the authors of the new book on "Veterinary Toxicology," and the success obtained by the publication of Professor Dwindiddie, may prove an inducement for some one interested to translate the new work. The subject, we are sure, is comparatively new with the American veterinarians, and though we know it receives some special attention in at least one of our veterinary colleges, it is one which veterinarians cannot afford to be ignorant of.

The work, in its 372 pages, treats after a short introduction, first of general, and in a second part, of special toxicology. The first part is divided into three chapters: 1st, Physiologico-medical toxicology; 2d, Chemical toxicology; 3d, Legal medicine and classification of poisons or toxics.

In the second part, the metals and their compounds are considered: Arsenic, antimony, copper, zinc, lead and mercury, etc.; the metalloids, mineral acids, phosphorus, etc.

In the second chapter, gases and vapors are considered, and in the third the organic substances, organic acids, opium, strychnine, tobacco, belladonna, veratrum, digitalis, canthorides, ergot, etc., bring to a close the consideration of this important subject.

"Veterinary Toxicology" may not be the only one of its kind, for as the authors say, they have been inspired by works from previous authors, but we believe it is the first one where the veterinarian can find gathered into one single volume everything which has been written in relation to the subject of toxicology, pertaining to all domestic animals, and by it all inquirers may at a glance find what they want without being obliged to refer to many works on therapeutics, pathology, hygiene, botany or chemistry.

Medecine Légale Vétérinaire. (Veterinary Legal Medicine.) By Mr. Alfred Gallier (J. B. Bailliere and fils, Paris.)

This is the fifth volume of the "Cadeac Encyclopædia," to which we have already alluded to on previous occasions, and when referring to the first four volumes published some time ago.

It is true, that when one on this side of the ocean receives and reads such a book, that he feels how deficient our English literature is, and how far backgards veterinary science is in this country, when compared with that of Europe.

The idea of a work on veterinary legal medicine in English would almost seem ridicule if one would not consider what can be written on the subject of great value.

Let us see what the fifth volume of the "Cadeac Encyclopædia" contains :

In the first part, where we have a definition of legal medicine properly, we are presented with the subjects of sodomy, bestiality, death, wounds in general, with all their varieties and the legislation relating to them, asphyxia, breach of varanty, contagious diseases, alimentary products and especially meat, life and accident insurances of animals, etc.

In the second part, the responsibility of the veterinarians in their various capacities, of the empirics, of the horse-shoers, of the hostlers, of the owners of animals used for breeding purposes, etc.

These formed about three-quarters of the work. Is it not enough to show the importance of the subject.

The balance (third and fourth parts) relates to the studies and practice of veterinary medicine in France, with other items relating to the same.

The fifth volume of the "Cadeac Encyclopædia," makes us wish for the early publication of the subsequent volumes, which we have no doubt will be issued in the same neat and rich manner familiar to the house of J. B. Bailliere and fils, the editors.

Friedberger and Fröhner. "Pathology and Therapeutics of Domestic Animals," translated by Prof. W. L. Zuill, M.D., D.V.S.

We have already called the attention of our readers to this excellent work when we received the French translation, and we have done the same in one of our last issues, in referring to the translation of Professor Zuill. All that remains for us to say is that the first volume is now ready and offered for sale; that the second volume will follow in a very short time the completion of the work, and we have no doubt that it will find its place in the bookcases of all veterinarians, in the classical libraries of all veterinary students, and that every veterinary college will find it mentioned among its list of text-books.

CORRESPONDENCE.

Editor AMERICAN VETERINARY REVIEW.

DEAR SIR:—While I do not wish to prolong the discussion on "education," which is assuming rather an acute state, I think that I ought to have the benefit of replying to Dr. Salmon's letter in the last issue of the REVIEW. The doctor, in his pleasantly sarcastic style, introduces me to the readers of this journal as "not yet sufficiently familiar with the English language to catch subtile meanings," thereby trying to make me appear only partly responsible for my utterances.

It is possible that I may have misconstrued the real meaning of the paragraphs in question, which Dr. Salmon thinks were aimed at him and not at me. I gladly accept this explanation and should look upon the matter as settled, were it not for the fact that the doctor brings out some points in his reply, to which I cannot possibly remain silent.

I, like Dr. Salmon, was very much annoyed, when a member of the association assailed the United States Meat Inspection Service at our last meeting, for which there was no occasion

whatever. I believe in fairness, and I should censure the report of the "high German official," who reported only two microscopes in use at the Chicago station, as unfair and contrary to my observation. From what I have seen of this service, I have always considered it as well performed, and have repeatedly so informed my friends in Germany. But while this report and the remarks of the gentleman were unjust, Dr. Salmon's angry reply, that "a certain physician told him that he found the microscopes at the Berlin abattoir, so covered with dust that he could not see through them," was just as unfair. I confess that I personally felt very much hurt by this remark, having been employed myself for several years at the Berlin abattoir, an institution of which I have always been proud, and which is being regarded as a model of sanitary science and a triumph of that branch of veterinary medicine. But not wishing to make matters worse, I kept silent, explaining this remarkable discovery to myself by the characteristic hurry with which the average American tourist is running through schools, and institutions of all kinds.

The doctor says in his letter that it has afforded him exquisite pleasure to point to the fact, that in spite of the elaborate inspection system in Germany it neither prevents trichinosis nor condemns carcasses of diseased animals, such as actimycosis, tuberculosis, pleuro-pneumonia, etc., which if an inspector passed in this country, would cost him his position. Is not this position too lofty, Dr. Salmon?

While the United States Meat Inspection owes its origin to the German law, it can well afford to differ in the conception of what is sound and unsound flesh as long as the people of the United States pay for everything. This little meat inspection of ours is merely for a show, whereas Germany's system is for a general purpose; ours is to help along a commercial undertaking of a certain part of our population, theirs is for the benefit of a whole nation of 55,000,000 people; ours is a neat little branch of a government department; theirs is a law in itsself, and a gigantic system, with a thousand branches running through the whole country.

It is all very well to say we condemn everything that is not sound, and ship to Germany only strictly healthy meat, when the carcasses condemned at home are turned loose at our local markets and are considered good enough for our own people. I never have seen so much poor meat in my life than in the Chicago butcher shops, and I hope to see the day when the United States inspection can be enforced all over the country to rectify these evils.

I fear the good doctor is under self-delusion, when he believes that the people of Germany eat unsound meat. What he calls facts are merely allegations. True, the German veterinarians have assumed a different standpoint than that of Dr. Salmon, and this by hard experience and by the decision of courts. They have to do justice to both consumers and producers of meat, wanton destruction having been condemned. There is plenty of sound meat in Germany, and that which is not strictly sound is made sound by boiling and sterilizing, and sold as such, in small pieces, to the poor people. Enormous quantities are condemned and utilized for fertilizers, etc. Everything, therefore, is made useful.

While seemingly judicious, the doctor is at present "rubbing it in hard to the Germans." I can understand his irritation from the international difficulties, but that will all go over. The veterinary profession of America owes much to England and France in educational matters, but the Bureau of Animal Industry owes its methods of scientific work entirely to German science. This will go down as history, and is being recognized already by neutral observers. In the *Veterinary Journal*, London, of January, 1895, page 58, I notice the following in a review of Dr. Theobald Smith's bulletin on investigation concerning infectious swine diseases: "The report contains evidence of much good work with an elaboration of details almost German in its extent and accuracy." I should like Dr. Salmon to assume a just attitude toward the Germans. If he will do so, they will return the compliment. Their slow logic may appear tiresome to the vivid Americans, but they will ultimately set things right.

With Dr. Salmon's views on educational matters I cannot agree at all. I readily give him credit for what he has done for the veterinary profession in a practical way. He has fought hot battles with adversaries at home and abroad, and stood firm in many a hard time, and had skill enough to come off on top of many other difficulties which would have swept minor men away. But as a veterinary pedagogue I have little faith in him as yet. I fully believe his views are honest, but if so his premises are wrong and therefore his conclusions void.

Nobody has assailed the two-year graduates as quacks in our last meeting at Philadelphia. What was said was an outflow of the general drift of opinion within the veterinary profession of the present day. The old argument that some excellent men have come out of two-year schools we all know and adknowledge. But I would rather twist my bad English and say *in spite* of the two-year course they have made excellent men out of themselves. This argument even holds good further backward, and we can prove that there were some very good men practising veterinary medicine that had never seen a veterinary college; that there are still many fields for practice where "the three-year graduate would not get a dividend upon the expense of his education, but which may be found practicable for the man who has only given two years' time and the fees of two courses of lectures for his professional education," I do not believe. Certainly I do not know of them, but I am informed that the country is overstocked with veterinarians and that they leave the profession by the hundreds.

There is no longer any need of manufacturing cheap veterinarians; neither is there further need of imparting such knowledge as a two-year school can furnish. All they can do is to give knowledge of the lowest kind, which consists of isolated facts, jammed into the students,—facts which may perhaps be retained by simple memory, but which can neither be comprehended nor interpreted by the student with a poor education. All this is merely empirical knowledge, and the men who apply such knowledge in practice can at best do it mechanically.

Higher knowledge, however, forms ideas out of scientific facts, unifies and generalizes them into systems, showing the limits of science as well as the limits of application. Such study calls for intellect, for continued, coherent work, which can only be had in a longer course, and taught only by professors who themselves know what they teach. From what I have said above it should be clear that the two-year schools are becoming a menace to our country and to our profession. The requirements of the veterinary profession are changing, the field of labor of the veterinarian is widening, and calls to him for different work, higher intelligence and education. All of this, to my firm belief, can only be accomplished by a three or four years' course of study.

Finally, Dr. Salmon thinks that there are some men "who are proclaiming themselves as the repositories of all the progressive tendencies, all the professional pride, all the unselfishness, and all the wisdom in the profession." If there are such men among us I do not know of them. I for my part wish to except myself from such classification.

The cause for all my arguments for higher education has simply been an inner feeling that a great wrong, a wicked offence is being perpetrated against our profession by some men of little education and less character in keeping up low grade schools, for the gain of money or from ignorance and incapacity. Personally I have no axe to grind for either "individuals or certain interests and institutions," but I have done all this arguing and warning from an ideal standpoint to prevent further wrongs to our profession. OLOF SCHWARZKOPF.

SOCIETY MEETINGS.

MISSOURI VALLEY VETERINARY MEDICAL ASSOCIATION.

LEAVENWORTH, KAN., January 5, 1895.

The third regular meeting of the Missouri Valley Veterinary Medical Association, was held in the parlors of the Byram Hotel, on Wednesday, December 12, 1894, at 7:30 P. M. Meeting was called to order by President Stewart.

The minutes of the previous meeting were read and approved. Many letters of regret were read from members of the profession who were unable to attend. Dr. Wattles' report, as delegate to the United States Veterinary Medical Association, was read, and, upon motion was placed on file, and a vote of thanks was given Dr. Wattles for his excellent report. The following resolution was read and adopted:

Resolved, That this association condemn the action of so-called veterinary dentists, or veterinary surgeons, in teaching that branch of veterinary science consisting of dental operations upon horses' teeth, to men that are not graduates of regular veterinary colleges, as we believe it increases the number of unqualified practitioners, and tends to lower the standard of this profession, and that teaching such men veterinary dentistry, or any branch thereof, by any member of this association, shall be considered a breach of the code of ethics.

This resolution was amended so as to includede castration, spaying, or any other branch of the profession.

Owing to the presence of the editor of the *Missouri Valley Farmer*, regular business was waived, and Dr. Wattles, with the stereopticon, exhibited some grand plates of specimens of hog cholera, tuberculosis, actinomycosis, and other pathological and physiological specimens, President Stewart explaining each plate in a most acceptable manner; discussion following very interesting. Dr. McCurdy's paper on "Veterinary Legislation," was productive of much discussion, and resulted in the chair appointing Drs. McCurdy, Mayo and Hunter, a committee on legislation. Dr. S. L. Hunter read a paper on "Tuberculosis and Tuberculin."

This was followed by a most original paper by Dr. Wattles on "The Treatment of Ossific Diseases of the Horse by Hypodermic Injection of Tincture of Iodine." Good discussion followed Dr. Wattles' paper.

Resolutions were passed, urging the Comitia Minora of the United States Veterinary Medical Association, to hold the regular meeting for 1895, at Des Moines, Ia. It was the unanimous opinion that the interests of the profession would be better enhanced by holding the meeting at Des Moines, Ia.

Gentlemen appointed to prepare papers for our next regular meeting: Drs. Black, Mayo, Sihler, Cook and Lemay.

Meeting adjourned to meet in Topeka, Kan., the second Wednesday of February, 1895.

S. L. HUNTER, V.S., *Sec.*

THE ONTARIO VETERINARY ASSOCIATION.

The annual meeting of this association was held in the veterinary college, Toronto, Can., on Friday, December 21, 1894.

The President, Mr. W. Burns, V.S., opened the meeting with a few well-chosen remarks, and called for the reading of the reports.

The secretary's, registrar's and auditor's reports were then received and adopted.

Considerable discussion then ensued on the action of certain parties in issuing so-called veterinary dental diplomas. The issuing of these was very strongly condemned at the last meeting, tending as it does, to bring legitimate veterinary science into disrepute.

Reputable members of the veterinary profession consider this so-called veterinary dentistry a complete humbug.

Mr. John Wende, V.S., also a member of the New York State Veterinary Association, remarked that that Association also very strongly condemned the issuing of these veterinary dental diplomas.

Major Lloyd, Mr. Gibb, Mr. O'Neal, Mr. C. Elliott and others took part in this discussion, and it was ultimately resolved that the same committee that were appointed last year should be continued, and that their efforts should be directed to suppress this humbug.

Mr. W. J. Wilson, of London, V.S., read an excellent paper on "The Dangers of Using the Meat and also the Milk of Diseased Animals as Human Food." He called attention to the toxic properties produced by the germ of tuberculosis (the bacillus tuberculosis) being especially injurious to consumptive

patients, and that these products were still existing in the meat and milk, although the vitality of the bacillus itself may have been destroyed by cooking or otherwise. He recommended the establishment of public abattoirs, and the inspection of meat by qualified men. He also recommended that dairies should be placed under suitable inspection, and that the hygienic conditions of milch cows should be looked to—cleanliness and sufficient air space being essential.

In the discussion that followed, in which Major Lloyd, Messrs. Shaw, Cowan and others took part, it was remarked that this "tuberculin test" was a reliable diagnostic agent, but judgment must be used in applying it; that it is well to take the body temperature of other animals in the herd not injected, as variations in the temperature may be produced by accidental causes.

Mr. Cowan, veterinary inspector, said that it was well not to make unnecessary alarm in connection with tuberculosis. That the disease existed only to a slight extent in Canada amongst cattle, less than in most other countries, and that the disease was on the decrease here. He also said that the various boards of health have great power in looking into the milk supply. That there is all the law that is required in investigating the milk and meat supply, and in condemning tubercular cases.

The thanks of the meeting were voted to Mr. Wilson for his interesting paper.

Mr. A. Crowforth, V.S., of Lockport, N. Y., read an interesting and exhaustive paper on "Tuberculosis in Relation to Animal Industry and Public Health; Its Prevalence and Importance." He said that it prevails so extensively throughout the civilized world, that no disease is so deserving of close study, or of the enforcement of effective measures for its suppression. Cholera, yellow fever and small-pox, which occasionally appear, creating universal terror and dismay, claim but few victims in comparison with this ever-present and universally devastating malady. These other plagues are quick, severe and fatal, and therefore can be promptly recognized and even stamped out, whereas tuberculosis is slow and uncertain in its progress, and

often escapes recognition for a long time. It may be classed with *the pestilence that walketh in darkness*, while the other disease named, may be likened to the *destructions that waste at noon day*. He gave statistics, showing the deaths in various parts of the world in the human race, and mentioned its prevalence as the same disease in the domestic animals, produced by the same micro-organism (the bacillus tuberculosis), and the difficulty of obtaining reliable statistics. In the Middle Ages, tuberculosis in animals was recognized as contagious, and laws were made against the use of affected carcasses as human food, which remain in force in Spain and Italy to the present day. In the early part of the present century its contagious character was doubted by medical practitioners. But at the present time, in the light of numerous investigations and experiments, all candid scientific observers accept the doctrine of its contagious character. He described the germ, its history, and mode of propagation, and also the accessory causes which tend to produce the disease. But none of these causes can produce the disease in the absence of the bacillus. He described the disease in the various organs and tissues of the body, and mentioned the difficulties experienced in diagnosis. He spoke strongly in favor of "tuberculin" as a used diagnostic agent, and said those who had it most valued it the most highly. In conclusion he compared the geographic distribution of cattle and the prevalence of tuberculosis in the human race, and showed the ultimate relations of cattle to man as a potent agent in the extension and maintenance of consumption in the human family. A discussion followed, in which Messrs. O'Neil, Wilson and others took part, and a vote of thanks was tendered to Mr. Crowforth, for his interesting and exhaustive paper.

Professor Smith exhibited, from the museum of the veterinary college, specimens of "gangrenous ergotisun" of the legs of cattle, from cases he had investigated last spring.

The sum of $25.00 was appropriated for a medal to be competed for by students of the Ontario Veterinary College at the approaching spring examinations.

The following are the officers for the ensuing year: President, Mr. G. L. Robson; 1st Vice-president, H. Hopkins; 2d Vice-president, D. Hamilton; Secretary, C. H. Sweetapple; Treasurer, N. Cowan; Auditors, Messrs. O'Neil and Elliott; Directors, Messrs. J. Wende, W. Burns, J. F. Quin, N. Gibb, W. J. Wilson, T. Holder, A. Crowforth, and N. Steel.

CALIFORNIA STATE VETERINARY MEDICAL ASSOCIATION.

SAN FRANCISCO, CAL., December 12, 1894.

On the above date the California State Medical Association held its annual meeting at the Baldwin Hotel.

The meeting was called to order by the President, Dr. H. A. Spencer.

Upon roll call the following named gentlemen betrayed their presence: Drs. Maclay, Spencer, Sr., Wadams, Orvis, Fox, Archibald, Pierce, Jackson, Robin, Fabbi, Forrest, Williams, Graham, Eddy, O'Rourke, and Hogarty.

The minutes of the previous meeting were read and approved.

The annual reports of the secretary and treasurer were received and placed on file.

The board of examiners were granted further time, on the application of Dr. J. Edmons.

The legislative committee, through their chairman, submitted the following report:

MR. PRESIDENT AND GENTLEMEN: Your committee on legislation beg leave to submit the accompanying bill for your consideration and adoption; further, we would recommend the adoption of the following resolution:

Resolved, That the bill as reported be presented at the next session of the legislature, and that said committee be and they are hereby empowered to watch the progress of said bill through the legislature.

All of which is respectfully submitted

Signed, THOMAS MACLAY,
C. B. ORVIS,
H. A. SPENCER,
R. A. ARCHIBALD.

The secretary read the bill, whereupon, on motion of Dr. Fox, the report was adopted.

The secretary moved that we have five hundred copies of the bill printed in circular form, and distributed among the members of the association. The motion was duly seconded and carried.

The committee on clinical entertainment reported that they had procured several cases for the entertainment. Upon motion the report was accepted, and the committee granted further time.

Under the head of applications for membership, the secretary submitted the following names: J. R. Shaw, A. B. Wise, J. A. Edmons, J. Trullinger, J. J. Streets, B. W. Schedde, J. W. O'-Rourke, S. A. Withers, A. J. Withers, E. J. Creely, and O. C. Baldy. The names were referred to the board of examiners.

The election of officers for the ensuing year resulted as follows: President, Dr. C. B. Orvis, of Stockton; Vice-president, Dr. R. T. Whittlesey, of Los Angeles; Secretary, Dr. R. A. Archibald, of Sacramento; Treasurer, Dr. D. R. Fox, of Sacramento; Board of Examiners, Drs. Maclay, Egan, Spencer, Sr., Graham and Lemke; Board of Directors, the several officers of the association.

The secretary presented a bill for $10.40 for secretary's supplies, etc., which was ordered paid.

The secretary moved that when this association adjourns, it be to meet in San Jose. The motion was duly seconded and carried.

Dr. Fox suggested the advisability of the association endorsing some one of its members for the position of State veterinarian. The matter was discussed in an informal manner by Drs. Spencer, Orvis, Fox, Pierce, and the secretary. During the discussion Dr. Maclay moved to adjourn for dinner. On the motion being put, the chair not being satisfied with an aye and no vote, called for a rising vote, which resulted in a tie, whereupon the chair cast the deciding vote in favor of the motion. The meeting then adjourned to meet at 7 P. M.

EVENING SESSION.

The meeting of the California State Veterinary Medical Association re-convened at 7 P. M.

The meeting was called to order by the President, Dr H. A. Spencer, who called upon the president-elect to take the chair.

The new President, Dr. C. B. Orvis, upon taking the chair delivered a few appropriate and well-chosen remarks, and as he was going to act in the capacity of an entertainer, he requested Dr. Spencer to take the chair for the rest of the evening.

Under the head of reading of papers, etc., and discussions, the chair called upon Dr. C. B. Orvis to entertain the meeting, which he did by reporting three cases of intestinal obstructions from the formation of tumors and abscesses in the sublumbar region.

The reports were very interesting and instructive, and a very animated discussion followed their reading. The chair closed the discussion with a few appropriate remarks.

Dr. W. E. Wadams was then called upon to entertain the meeting, which he did by offering an instructive and exhaustive paper on "Canine Distemper." The essayist described the disease in all its forms, giving the different symptoms, and the different methods of combating same. He also thoroughly described the different complications that might arise.

The reading of the paper was followed by a lively discussion, which was participated in by Drs. Maclay, Archibald, Orvis, Eddy, Fox, Pierce, Fabbi, O'Rourke, and Jackson. The chair closed the discussion with a few remarks, and then called for reports of peculiar cases.

The secretary reported a case of a cow whose milk contained so much acid that it was for all practical purposes useless. He said the cow had been changed from one food to another without changing the character of the milk. He also reported a few cases of what he supposed to be chronic pharyngitis, and he said that in some localities the disease seemed to be very prevalent in the late summer and fall of the year.

Dr. Orvis reported some cases of actinomycosis, and he exhibited some specimens taken from the tongues of two cows, showing the ravages of the disease. He said the cows were almost starved to death when he was called in to see them.

Under the head of new business, Dr. Maclay offered the following resolutions:

WHEREAS, It has pleased the great Architect of the universe to call from our midst one of our respected members; be it

Resolved, That in the death of Peter Burns this association loses one of its most active members and most ardent supporters; as a man, as a citizen, as a husband, and as a father he was beloved by all; be it further

Resolved, That the heartfelt sympathy of the members of this association be, and it is hereby extended to the family of the deceased in this their hour of bereavement; be it further

Resolved, That a copy of these resolutions be spread upon the minutes, and a copy forwarded to the family.

Upon motion the resolutions were adopted unanimously.

Dr. Maclay then offered the following resolution:

Resolved, That the thanks of this association be, and is hereby extended to Dr. H. A. Spencer for the faithful and impartial manner in which he has performed the arduous duties of the office of president during the past year.

Upon motion the resolution was adopted.

The secretary offered the following resolutlon:

WHEREAS, It has come to our notice that there are some of the members of this association, and some who intend becoming members, who are violating Section 1 of the Code of Ethics, which states "That no member shall assume a title to which he has not a just claim;" therefore be it

Resolved, That it is the sense of this association that any member who refuses to discard, or who, in violation of the Code of Ethics, adopts a title to which he has not a just claim, be expelled from the association and have his name stricken from the roll of membership.

Considerable discussion followed, but finally, on motion by Dr. Maclay, the resolutions were adopted.

The chair appointed the following-named gentlemen as essayists for the next meeting: Drs. Spencer Sr., Faulkner, and Jackson.

On motion by the secretary, a vote of thanks was extended to the essayists for the able and masterly manner in which they had entertained the meeting.

There being no further business to come before the meeting, it adjourned to meet in San Jose on Wednesday, March 13, 1895.

On Thursday, December 13, 1894, at 9 A. M., the members of the California State Veterinary Medical Association assembled at Dr. J. W. O'Rourke's hospital, at 331 Golden Gate avenue, San Francisco, to witness a clinical entertainment.

The first case was the extirpation of an actinomycosis tumor from the sublingual region on a cow. The operation was skillfully performed by Drs. Spencer and Fox.

The second operation was the removal of a melanotic tumor from the lumbar region of a horse, by Dr. C. B. Orvis.

The third operation on the programme was the removal of the ovaries from a bitch, by Dr. F. E. Pierce.

The fourth and last operation was the removal of the left arytenoid cartilage and the left vocal cords for the amelioration of a condition called "roaring" in a horse, by Dr. R. A. Archibald.

The entertainment was voted an entire success, instructive as well as enjoyable.

The members, before adjournment, through the President, Dr. Orvis, upon the suggestion of Dr. Fox, extended to Dr. O'Rourke a vote of thanks for the use of his hospital, and his kindness.

R. A. ARCHIBALD, V.S., *Sec.*

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

The first monthly meeting of the Keystone Veterinary Medical Association, for 1895, was called to order by President Lintz, at the home of Dr. J. B. Rayner, 135 East Gay street, West Chester, on January 8th. The weather being inclement, the attendance was small. Those answering to roll call were Drs. W. H. Hoskins, C. Lintz, McAnulty, Rayner and Rhoads.

The Chairman of the Legislative Committee denied the statement of the press that the veterinarians' bill to establish a live stock and sanitary commission in the State was intended to legislate any one out of office.

The discussion of "Cerebro Spinal Meningitis," was opened by Dr. Hoskins, who after citing several cases to substantiate his theory, claimed it to be a disease produced by taking vegetable mould, containing the germ into the system.

Dr. Rhoads cited a case where it was undoubtedly caused by vegetable mould.

Dr. Lintz believed it to be due to inhaling an atmosphere tainted with the spores and gave a vivid account of extensive experiments which he had helped carry on.

On motion the reading of a paper on "Rupture of the Stomach," by Dr. Rayner, and one on "Pathogenesis," by Dr. Rhoads, were postponed, that all the time might be given to the discussion.

W. L. RHOADS, D.V.S., *Sec.*

MAINE VETERINARY MEDICAL ASSOCIATION.

The annual meeting of the Maine Veterinary Medical Association was held at the Cony House, Augusta, January 9, 1895, at 8 P. M., Vice-president, Dr. Huntington, in the chair.

The following members answered the roll call: Drs. Dwinal, Farnum, Huntington, Joly, Russell and Choate.

It was voted to present the original bill to the present legislature, with slight changes in the amount of fines and imprisonment to be imposed for violation of the same, so as to read as follows:

Be it enacted by the Senate and House of Representatives in legislature assembled, as follows:

SECTION 1. No person shall advertise or hold himself out as a veterinarian or veterinary surgeon, unless he is a graduate of a veterinary college or school.

SEC. 2. Any person violating the provisions of the foregoing section shall be punished by fine not less than five dollars nor more than fifty dollars, or by imprisonment of not more than three months, or by both.

A copy of the above was ordered sent to each of the members, asking them to refer the matter to the representatives from their locality, and urge said representatives to give it their favorable consideration and support.

The Executive Committee reported favorably the names of Drs. F. M. Perry, Houlton and F. E. Freeman, Belfast, for membership in the association.

In absence of the chairman of Committee on Professional Fees, Dr. Choate reported favorably the following schedule of prices, which was adopted by the association:

Single visits	$ 1.50
More than one visit each	1.00
Country visits per mile, one way; first mile	1.00
Country visits per mile, one way; after first mile	.50
Night attendance	2.00 to $ 5.00
Per day	10.00 and expenses.
Consultation at office	1.00
Consultation with other veterinarians	3.00

OPERATIONS.

Castrating colts at operating room	3.00
Castrating colts outdoor	5.00
Castrating over four years old	5.00 to $10.00
Castrating ridglings	10.00 to 15.00
Castrating small animals	1.00 to 3.00
Floating	1.00 to 2.00
Fireing	5.00 to 10.00
Neurotomy	5.00 to 10.00
Parturition	5.00 to 10.00
Phlebotomy	3.00
Quittor	10.00 to 15.00
Removing placenta	3.00 to 5.00
Removing tumors	5.00 to 10.00
Removing molars	3.00 to 5.00
Spaying bitches	3.00 to 5.00
Tracheotomy	3.00 to 5.00
Minor operations requiring casting	5.00

W. S. LORD, M.D.V.,
C. W. PURCELL, V.S.,
H. H. CHOATE, D.V.S.,
Committee on Professional Fees.

LIBRARY OF THE
STATE AGRICULT'L COLLEGE
FORT COLLINS, COLO.

Drs. F. M. Perry and F. E. Freeman, were elected to membership in this association.

The election of officers resulted in the election of Geo. H. Bailey, D.V.S., President; F. W. Huntington, D.V.S., Vice-president; H. H. Choate, D.V.S., Secretary; A. Joly, D.V.S., Treasurer.

Dr. Choate presented his report for the past year as secretary, containing some suggestions which were favorably considered by the association.

It was voted to append to the present pamphlet of the Constitution and By-Laws, the names of the officers and members, with their addresses, also the time for holding the meetings.

A motion was carried to have two hundred copies of the schedule of professional fees, printed and distributed among the members. The motion was carried to hold the next meeting at Belfast, April 11, 1895. The meeting then adjourned.

OBITUARY.

DR. P. F. KIERNAN, D.V.S.

Through the kindness of Dr. D. Lemay, we have to announce the death of Dr. P. F. Kiernan, a graduate of the American Veterinary College, class of 1887, which took place in Junction City, Kan., on the 18th of February, 1895, from consumption. Dr. Kiernan was thirty-one (31) years old.

ASSISTANTSHIP WANTED

By an American Veterinary College student, class of 1896, for the summer months, with a country practitioner.

P. K. NICHOLS,
Port Richmond,
Staten Island, N. Y.